University of Maryland Theses

Early Doctor of Medicine and Doctor of Dental Surgery Theses
Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation, or as Thesis and Essay were presented to the University of Maryland for the degree of Doctor of Medicine and/or Doctor of Dental Surgery for years 1813–1837. The individual dissertations were bound together during the 1840's. The original table of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were: Richard J. Dziobek, Historical Literature Preservation Officer; Marie McIntyre Phelan, Metadata Management Librarian; Angela Cardamone and David Harding-Henry, Resources Developer; Sarah Dziobek, Alex Sokolov and Melissa Wolff, Services Developer.

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University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

The project team who investigated and corrected the tables of contents were Richard J. Behles, Historical Librarian/Preservation Officer; María Milagros Pinkas, Metadata Management Librarian; Angela Cochrane and Carol Harling-Henry, Resources Division; Sarah Hovde, Abra Schnur and Megan Wolff, Services Division.

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(CORRECTED TABLE OF CONTENTS)

UNIVERSITY OF MARYLAND

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1879 (b)

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Clark, H. T.	Acute Peritonitis
Lemaster, Andrew J.	The Brain
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Carter, H. R. Jr.	Salivary Secretion[1]
Deck, Milton B.	Blood
Aplin, Charles F.[2]	Croupous Pneumonia
Tearney, Joseph F.	Putrefactive Germs in Surgery

[1] Legal size pages folded in half, bound on top margin. Stained. Illegible in original. Bound out of order.
[2] Could be Alpin, Charles 1879 (Cordell).

HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1851-1892; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

UNIVERSITY OF MARYLAND

THESES

1879 (b)

Gregg, C. K.	The Physiological Action of Mercury	25p.
Eilau ~~Eilan~~, E. W.	The Urine	31p.
Auppen, C. C.	The Present Aspect of Medical Science	26p.
Clark, H. T.	Acute Peritonitis	17p.
Lemaster, A. J.	The Brain	43p.
Harrell ~~Hawell~~, F. W.	Scarlet Fever	26p.
McCain, S. J.	Yellow Fever	12p.
Lincoln, F. T.	Yellow Fever	23p.
Mathias, J. S.	Intermittent Fever	21p.
Johnson, C. F.	Typhoid Fever	19p.
Barnett, A. B.	The Management of Natural Labor	23p.
Welch, L. B.	Therapeutics	27p.
Carter, H. R. Jr.	The Salivary Secretion	20p.
Deck, M. B.	The Blood	17p.
Aplin, C. F.	Croupous Pneumonia	42p.
Tearney, J. F.	The Putrefactive Germs in Surgery	29p.

A Thesis
on
The Physiological Action of Mercury.

respectfully submitted to the
Provost, Regents and Faculty of Physic
of the
University of Maryland.
for the
Degree of Doctor of Medicine.

by
Cornelius K. Gregg.
of
Texas.

Anno Domini
1879

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Physiological Action of Mercury.

This interesting and valuable metal was discovered many centuries ago, but was greatly feared by the ancients, who only looked upon it as a powerful poison and for that reason mercury was for a long time useless as a medicine. It was obtained in Spain by the Greeks with great pains who however did not dare to use it. The Arabian physicians were the first who ventured upon its use therapeutically, which they did about [illegible]. From that date to its introduction into England as a medicinal agent, which was during the reign of Charles, it had a great deal to contend against, so many having been [illegible] into [illegible] by its injudicious use, that professional men were prone to consider well before using such a disastrous medicine as they then considered it; having once been introduced into England, it began to gain favor until at present it

Quicksilver and its Chemical Manufacture.

The chief supplies of Mercury were formerly produced from Idria in Germany, Almaden in Spain, Peru, China and Siberia; but the ore having been discovered recently in California and Australia, the largest amount now used is obtained from the two last mentioned places. The metal is commonly found existing in nature in combination with Sulphur as the native Sulphide or Cinnabar; it is obtained in the free state by heating the Sulphide in air from stock with lime or scraps of iron, and condensing the vapors into a large chamber where the Mercury is condensed while the SO_2 is allowed to escape. In this manner it is obtained in a state of considerable purity, and is used in small quantities it is sometimes found to be adulterated with tin or lead

which metals it dissolves to some extent without much loss of fluidity. Such adulteration may be detected by the surface the Mercury exhibits when shaken in a bottle containing air and by the globules which will roll upon a table leaving a train or tail.

Mercury is the heaviest of all metals except Gold and Platinum, its At. wt. being 200 compared with Hydrogen as the standard. It is the only metal which is liquid at ordinary temperatures requiring a temp. of 40° below 0 to freeze; it will boil at a temp. of 662° F. On account of its silver like lustre Mercury has derived the name Hydrargyrum hence its Chemical Symbol Hg. Nitric acid readily Mercury readily, Muriatic (HCl) only affects it when [illegible]

act upon it when in a concentrated state. By its union with other metals it may form compounds which are termed Amalgams. It is a dyad and gives rise to mercurous and mercuric compounds. The preparations of mercury are very numerous. The principal ones are: the Oxides, Chlorides, Blue Pill, mercury with chalk (Hydrargyrum cum Creta), Mercurial Ointment and the Iodides; the other preps. Cyanide, Sulphide, etc. are of little importance as they are seldom used.

Before entering upon the study of the various Physiological & Medicinal, our first enquiry should be: what is meant by the term Physiological Action? This a question of some complexity and has been discussed by many able writers, and does not seem to be at the present time [illegible]

It is held by M. Dr. Mallopeau of Paris in his recent treatise entitled: "Mercure action physiologique et therapeutique" that the physiological action of a medicine is the action upon the living organism, whether diseased or in a state of health. In giving this as a definition he does not discriminate between the physiological and therapeutical action, the latter being the action exerted upon the human body when diseased, the former, as I think, therefore would be the action of that medicine upon a healthy person. For Physiology treats of the functions of the tissues and organs of the body in a state of health. The physiological action of Mercury seems to me then to be its action upon the human body free from disease.

In order to

physiological action Mercury must first

be absorbed into the blood and then to be disseminated throughout the tissues and organs of the body. Through what channels does it gain access into the system? There are three in number viz: the skin, alimentary canal and respiratory track. Poison is applied to the skin either by friction or fumigation. It enters the alimentary canal with food, drink or solution; the respiratory passages take it up by inhalation. Before it can be absorbed and enter the blood vessels and its ingredients must undergo certain chemical changes. Mucous surfaces of the lung slightly vary in external characteristics, moisture exists in the lung in a finely divided state and it readily enters by its vapor being absorbed or coming in contact with the oxygen of the atmosphere is converted into an oxide or it unite

with the alkaline juices of the bowels to form compounds capable of being absorbed. The changes which the preparations undergo in the alimentary canal are rather more complex. If metallic mercury is taken only a very minute quantity becomes oxydized and is absorbed the large bulk of that taken passing out unaffected, acting as a purgative however in its passage through the intestines. Mercury is a vehicle for several of the oxygen that are the preparations were converted by the calomel chlorine into a certain amount of [illegible] chloride ($HgCl_2$) the amount of bichloride formed by each prep. being different, the bi-chloride in contact with alkaline bases converts directly into the bi-calomide whereas the proto salts are first converted into

proto-chloride and by a subsequent reaction a very poisonous compound of the sublimate is produced. This is why the corrosive chloride salts are all so much more powerful than the proto salts. Lost corroborated the views of Mialhe. The theory of Mialhe has stood the present from however very few authorities. Duchesne proved that the bichloride, mixed with albumen to form a compound which is of being assimilated without the aid of the albuminate of mercury. Calomel may be taken during digestion and when producing a copious flow difficulties. If taken during the fasting state, it is acted upon with stomach water by the hydrochloric acid, being converted into food and lost instead of into the sublimate and by lactic acid into a lactate; in the small

intestines it is converted by the alkaline carbonates into a double salt; in the large intestines (if it reach there) it is at least having been absorbed in the stomach or small intestines) the sulphuretted hydrogen gas which then converts it into the sulphide of mercury. This latter action does not take place if Calomel is given to infants. If taken during dentition the Calomel is decomposed by the bottom material of the food and converted into metallic mercury and a soluble albuminate. The iodides undergo modifications analogous to that of the chlorides. Blue pill containing mercury in a very minutely divided state seems to be converted by the Oxygen of the alimentary canal into an oxide which is readily absorbed. Calomel is the preparation chiefly

used for inhalation and it cannot be said to
influence if taken by this method, through its
solubility with mucus secretion of the air pas-
sages. After entering the blood mercury if
very small amounts are taken cannot be said
to have the power of increasing the number of red globules
and thus exerting a tonic influence on the
system at large; but should the amount which
enters the blood be excessive it decomposes and
disintegrates that fluid, the amount of water
is increased which makes it more prone
to putrefaction. The fibrin albumen and
globules are diminished in quantity and then
it coagulates with difficulty, when coagula-
ted it is softened and buffed but it is the
buffy coat of anaemia & not of inflammation,
the clot appears to be rotten and easily
broken down. Through the medium of the

blood mercury enters various tissues and organs of the body, having a greater affinity for some than others. The changes which these tissues and organs undergo after mercury has entered them I will speak of later, stating first the various modes by which mercury gains its exit from the system. It is eliminated chiefly by the kidneys but also by the saliva, milk, perspiration and feces. That mercury is eliminated in this way has been conclusively demonstrated; its existence in saliva has given rise to some discussion, many adhere to the view that mercurial stomatitis was not due to mercury entering the buccal cavity from the salivary duct, but by reason of the epithelium lining that cavity. Mercury has however been found

in Steno's duct which is sufficient proof that of its being partly eliminated by the salivary gland. Its existence with milk has been proved by the fact that children laboring under hereditary Syphilis and only taking the mother's milk for nourishment have had the disease eradicated by the mother undergoing a mercurial treatment. Globules of metalic mercury have been seen upon the surface of the body of children eating it which alone demonstrates its partial elimination by the perspiration. Facts are not necessary to prove its presence in the urine and fæces, as various experiments have demonstrated its elimination in this way. A single dose of mercury is generally eliminated in 3 or 4 days if it is given for a certain length of time, some is eliminated

and that which is not so disposed of remains with system, that is to say it accumulates.

After the accumulation of Mercury in the system, it gives rise to a constitutional effect. Salivation, mercurialism or ptyalism as it is called, of which there are two modes viz. slight mercurialism, acute intense and chronic intense salivation. The first or slight ptyalism requires only a brief space; the chief manifestations of it being: a slight redness of the buccal cavity, swelling of the gums and metallic taste that shows that mercury is beginning to have its constitutional effect and if it be continued as soon as the above symptoms have manifested themselves, and the proper elimination be given, either of a deleterious nature or not, I believe we consider intense mercurialism of an

acute character. The "reviser of salivation par excellence" says a celebrated author on this subject "are friction, fumigation and excessive doses of Calomel internally" and he holds moreover that Calomel and mercurial ointment have a more elective action on the buccal mucous membrane than any of the other preparations of mercury. The Effect of the way is attributed to the fact that very large doses of Calomel and mercurial ointment may be given without the bi chloride and bin-iodide the latter being such powerful corrosive poisons that they can only be given in very small doses. Marked idiosyncrasies have been noted in some persons as to the effect that mercury will have upon them; the sad case of M. Bouchard may be

cited as an illustration of this fact, as he was fatally injured after making four applications of mercurial ointment. An instance is recorded where life was almost extinguished by a single application of the ointment during an attack of puerperal peritonitis. Some on the contrary can stand enormous doses of mercury without any marked effect being produced. A gentleman used the ointment for several months without any signs of salivation, who years before produced stomatitis by a single application of the ointment for the cure of scabies. Thus we see that the constitutional susceptibility varies not only in different individuals but with the same person at various periods. Men as a general rule are more susceptible than women to the

Environment influence of Mercury. The gums are
both so almost independent in the development
of stomatitis, as at Hindoo and
Idria infants and old persons are affected
if ever attacked on the contrary carious
teeth, cutting of the wisdom teeth, fatigue
and an irritable stomach all predispos-
ing causes. Stomatitis is among the most
startling of the symptoms of mercury:
it generally makes its appearance behind
the second molar tooth of the upper jaw,
the gums then begin to swell becoming
hot painful and red manifesting all
the characters of an acute inflam-
mation. The breath has a fetid odor
(mercurial breath), a sense of dryness in
the mouth is complained of, metallic
taste being also experienced, the saliva flow

uncertain about their position, the tongue lips and cheek become tumified. These symptoms are aggravated if the drug continue to be given. Among the other disorders of the digestive tract are: dyspepsia, pain in the epigastrium, vomiting and diarrhoea. The action on the liver has given rise to marked diversities of opinion: four theories are at present recognized as to the cholagogue action of the drug: 1st It augments the biliary flow by removing an intestinal obstruction. 2d Prevents a hypercrinia of the bile by improving morbid conditions of the liver which embarrass its secretion. 3d Increases the formation of bile by an indirect action on the liver. 4th Increases it by a direct. There is a large class which deny the [illegible]

action of Mercury in toto. That Mercury does exert a contagious action clinical facts demonstrate but they ignore how it acts. The action of Mercury upon the skin in acute intense Salivation has given rise to some discussion as it is denied by some that the Eruptions occur upon subjects laboring under the Class of Mercurialism has a specific character but they are wrong as it has been proved conclusively that a skilled dermatologist can always detect the Eruption produced by an excess of Mercury in the system. The cause of the Eruption seems to be, that as the Mercury is being Eliminated through the pores of the skin, it comes in contact with the salts of the perspiration and

produces an irritating compound; the character of the eruption varies in intensity being first mild and gradually assuming a malignant type; fever is generally a concomitant of the eruption. Our next enquiry is what effect has the form of mercurialism under consideration upon the kidneys? Albuminuria with or without hæmaturia is a symptom that the kidneys have become affected at other times or later on the kidneys are so changed that suppression of urine occurs (that is to say the urine fails to be secreted) and hence the urea being retained with the blood you see to uræmic poisoning one of the most fatal of results.

Having entered somewhat into the

symptoms and results of acute intoxication Salivation, I now propose to take up the chronic form; generally induced by introducing into the system very minute quantities of Mercury for a great length of time, the disease then comes on slowly and gradually. The initial symptoms of chronic Salivation are: paleness and languor the patient looks pale and emaciated, they complain of incident pains in the head, a tingling in the ears and an vague pains in the limbs and joints. One of the most remarkable of the systematic phenomena is an exaltation of the sensibility, the patients become troubled within themselves they become morose and irritable, cannot sleep and suffer from nervousness.

The mental symptoms are those referable to the nervous system which are very different from those which result later on. Its action on the digestive system in the chronic is first to produce stomachics which differs from that of the acute. The breath is fetid saliva not so abundant and the pain is of a milder character; the bowels blacken and pass out slowly and as a distinguished author has said, "the greater the number of bowels more the evil with mouth," the inflammation then by the bowels early on of the chronic kind, it spreads into the bowels and even into the Eustachian tube, the stomach also takes on chronic inflammation giving rise to various troubles. Of deleterious action on the nervous system

is one of the most marked of the results of chronic mercurialism. Nervous trembling is observed such as that produced by lead and alcohol, few of the workmen in mercury mines fail to be affected in this way, this trembling may be confined to certain parts or extend throughout the whole body, the patient may not be able to write his arm being affected, or he cannot walk two legs being affected. How to account for the effect of mercury has not been satisfactorily explained, the metal this time has been found with brain, but as to the mode by which its effects on the nervous system are produced has not been demonstrated. The nervous trembling alluded to is the beginning of more serious troubles

the muscles especially the extensors are violently contracted, in some instances Locomotor Ataxia is produced which is characterized by derangement or complete loss of motor power over various muscles. Hemiplegia is sometimes a result. Other serious troubles are Epilepsy and Aphasia. And again the patient's intellectual faculties may alone be affected: he has strange hallucinations and the mind in some instances is so powerfully affected that insanity may ensue. Chronic mercurialism does not affect the skin to such a degree as the acute, the only marked effect which is produced being a slight salivation or falling out of the hair. Often the air passages are affected in the same manner

Aphonia is sometimes produced owing to a paralysis of the muscles of the larynx, patients have a marked tendency to phthisis from a depressed state of the organism at large. Its action upon the stomach has not been studied very closely and the only point in the mass of works of note is that it does not found with urine and then is not expression as with acute. Its action upon the female organs is variable producing in some women an amenorrhoea of the menses in others a diminution. Its power of producing abortion has been exemplified in pregnant women working in the mercury mines. In general nutrition in chronic poisoning the man is debilitated and broken down, the patient has a

careworn Expression and suffers extremely until finally the patient succumbs to the Mercurial Marasmus.

Tmis

The Urine
Its Chemistry & Pathology

an
inaugural Thesis presented to
The Provost, Dean & Faculty of Physic
of the
University of Maryland,
for the Degree of
Doctor of Medicine
by
Emanuel W. Gilan.
— 1879 —

The urine is very obtrusive in character, and constituents to that of the Carnivora. When fresh it is clear, of a light amber color of an acid reaction which according to Liebig is due to the presence of acid Phosphates, according to Lehman however, the acidity is due to free hippuric acid and a trace of lactic acid. It has a bitter saline taste and a peculiar odor which Stadeler affirms is due to Carbolic acid. The specific gravity varies according to the particular age, sex &c of the individual from 1.000 to 1.025. These are physical properties one of some diagnostic value. The normal color varies from the light amber color mentioned above to a dark or brownish yellow. Sir Charles Prince

of color have been observed;
I Pale. Colorless or straw color
II Normal. Golden yellow or amber yellow
III Reddish yellow or red of high sp. gr.
IV Dark Brownish from color of dark beer to black
V Green and VI Blue.
The conclusions to be drawn from pathological urine showing these different colors are that the urine of the first class does not indicate any acute malady. It occurs frequently in convalescence and in chronic diseases as anaemia, chlorosis, diabetes and it has been asserted that by its low continuance the type or grade of anaemia could be found. It contains little urochrome, small amount of urea and urates but fair fixed constituents, excepting occasions when it occurs Diabetes Mellitus Dr Leech thinks

varieties of urine occurs after the free imbibition of beer or water (Normal Urine.) Normally colored urine generally shows the absence of disease. The urine of the third class shows by its color and high sp. gr. that it is highly concentrated, rich in solid constituents and urea. Its reaction is mostly acid. It can occur normally after having partaken of rich food, but its disease is of importance in so far as it occurs with the continued fever. In relation it is often of greater value than the height of temperature. Albumen poisons mostly to an abnormal ferment which the urine has dissolved or excluded within its, such as bilirubin, blood, albumen. It is often hydrocarbon

without specifying disease, the color in such cases being referrable to medicines as Rhubarb Senna Carbolic acid &c. Green urine of a dirty appearance occurs in Malaria through absorption of Biliverdine and is of the same significance as brown intense urine. Dirty blue urine shows a blue ferment, it has an alkaline reaction and is said to be concommitant upon Cholera and Typhus. The odor of the urine is of very little importance and is supposed to arise from Carbolic and Phenylic acids. The odor of newly urine is subject to as many fluctuations as the color and can be most readily affected by the use of Sugar, Cubebs, Asparagus &c. After the alkaline reaction has set in a disagreeable odor occurs. Heller has observed a peculiar putrescent odor occurring when

hypermia and affections of the spinal cord which indicate the presence or formation of serous probably the cause of infection in these diseases.

The sp. gr. of normal urine is influenced by the amount of urea and chloride Sodium, and it can be used to determine the amount of normal constituents. For this purpose the sp. gr. is averaged and the last two decimals multiplied by 2 (Trapp) or 2.33 (Neubauer). Sugar and albumen mostly influence the sp. gr. of a pathological urine and a high sp. gr. of pale urine especially with albumen or sugar. As a rule the sp. gr. is increased in acute inflammations, fevers, diabetes and is decreased in chronic diseases of the liver and renal affections.

Normal urine after boiling remains clear if it be decomposed by strong acids it gives rise to a peculiar disagreeable odor and at the same time the color changes more or less darks. There is no cloudiness immediately after ebullition but upon standing uric acid crystallizes upon the interior bottom of the vessel.

The normal constituents of urine are Water constituting the greater portion by weight, urea, uric acid, hippuric acid, creatine, creatinine, xanthin, pigments, indican, mucus, chlorides & phosphates and sulphates of potassium, sodium, ammonium, calcium and magnesium with occasional traces of nitrates, silicates, fluorides, lactic & other organic acids, sometimes albumen & sugar.

Chloride of Ammonium precipitates hydrate in urine previously acidulated with hydrochloric acid. Nitrate Silver precip. chloride Silver if the urine be previously acidulated with Nitric acid, if this be not added the Nitrate will precipitate the Phosphate. Phosphoric acid is precipitated from urine by the addition of Calcic chloride if the urine be acidulated with Acetic acid or Acetate Sodium. Acetate Lead precipitates Chlorides, Phosphates & Sulphates. Lead Oxalic acid precipitates Oxalate Calcium as does also Oxalate ammonium. Nitrate of Mercury will after the removal of the Sulphate and Phosphate cause a final precipitate consisting of a yellowish precipitate from the decomposition of the Nitrate and the Chloride of [illegible]

$AgONO_5 + NaCl = AgCl + NaONO_5$

this is succeeded by a permanent white precipitate caused by the combination of the nitrate of silver in excess with the urea. Alcohol causes a turbidity which however disappears upon dilution with water. Normal urine is acid, but does however in consequence of the diminution of carbonate or the organic salts of the alkalies be rendered alkaline. A strongly acid urine is of importance in indicating certain diseases, conditions and inflammations of the kidneys or ureters. The deposit frequently occurs in rheumatism (Pneumonia and Pleurisy. The nitratine reaction is of great importance. It is due to carbonate of urea if above the

presence of a severe inflammation of the brain, if due to Ammonium Carbonate it indicates uræmia, the urine in this case often being brown from its admixture with Haematine, or it may be present in the urine from the existence of a severe catarrh, and in this case the urine mostly clouded from mucus or pus.
Upon standing urine undergoes two fermentative processes. The first or acid is due accordingly to the decomposition of the mucus or exudate of the bladder. In these cases, there exists a pus similar to the last pus which by catalysis decomposes the urinary pigments the color is dark mahogany. Lactic and acetic acids are also and there usually occur in solution

deliquate red colored sediments, mixtures of uric acid, urates and mucus. The acid fermentation appears therefore to be in intimate relation with the existence or formation of sediments and calculi. The alkaline depends upon the temperature, cleanliness, in the vessels, and in owing to these circumstances that the former will take a longer or shorter time, the acid fermentation need not necessarily be made, under certain not or clearly understood conditions there is underfoot the alkaline fermentation with flocculent. This is also induced by the mucus corpuscles of the bladder, as this has been observed mostly in affections of the bladder, that prime [illegible] alkaline urea is decomposed into

Carbonate of Ammonia and free Ammonia

$C_2H_4N_2O_2 + 4HO = NH_4O,HCO_2 + NH_3 + CO_2$

In consequence of this its odor is ammoniacal and it effervesces with acids.

The free ammonia unites with Phosphate of Magnesia and Calcium to form the triple Phosphate. This urine decomposed with caustic ammonia is only neutral.

The relation of the fixed principles to the amount of water is not constant, as indicated by the sp. gr. It varies from 12 to 60 grammes per thousand. The amount of the fixed constituent are ascertained by evaporating a weighed quantity of urine on the water bath and drying the residue at a temperature of 100°F. The

method is liable to error from the fact that during the drying, the acid phosphate of soda decomposes the urea, to correct this an apparatus is necessary to collect and estimate the amount of ammonia. In practice however it is not necessary to be so minute as the amount of urea can be closely approximated from the sp. gr. The non volatile salts are calculated in this manner. A measured amount of urine is evaporated to dryness and heated to redness until all organic matter is consumed. In the urine there are also several causes of error. The temperature should not be too high so as to decompose the chloride and that the charcoal [illegible]

the sulphuric and phosphoric salts
For this purpose it is better to dissolve
these salts in boiling water first
previous to the full incineration and
subsequently heat the charcoal alone.
Evaporate the solution to dryness
and heat the whole to a moderate
degree of redness in a covered platinum
crucible. The amount in normal urine
often present differs very much
and depends upon nutrition, overwork
or weight of the individual. On a
mixed diet it amounts to 2.5 or
3.2 grs. Urea is augmented in
all inflammatory diseases mostly
in acute cerebral affections and
rheumatism and in dropsy when
diuretics are employed. Mix

decreased in the neuroses, chronic diseases in which the change of material underlies spinal and renal affections. In typhus it is first increased but rapidly lessened whilst in meningitis it rises and remains permanently so. A small quantity of urine about 20 to 30 grammes is evaporated upon a water bath to the consistence of syrup shaken with alcohol filtered and alcohol evaporated. Urea more or less colored remains behind. If it be dissolved in a small quantity of water, and the solution decomposed with oxalic or nitric acid urea crystallizes upon sides and bottom of the vessel in white chiny[illegible] or hexagonal tablets. If a small quantity

of urea be present the crystals can be observed under the microscope. To determine the amount of urea various methods are at our disposal but the one from which we adduce the best results is that devised by Liebig, it has also the advantage of taking a shorter time. Add to dilute solution of urea a like amount of dilute solution of Nitrate Mercury and gradually neutralize the free acid with Carbonate of ~~Ammo~~ Soda, a copious flocculent precipitate ensues. If the process is continued alternately with the addition of Nit. Mercury and Carbon Soda a permanently neutral or acid or basic Nit Merc

will ensue. If then at this point the liquid does not contain any more urea as this is in combination with the nitrate, since one Equivalent of Mercurous oxide combines with one of urea. In order to calculate the amount at the same time we use a prepared rectified solution of Mercurous oxide of which 1 CC will indicate 10 Milligram. of urea. Before proceeding to estimate the urea it is necessary to precipitate the sulphates & phosphates by a mixture of one part of cold saturated solution of Nit. Barium and 2 parts cold Baryta water. The test solution of Mercurous oxide is prepared: 96.855 grams of pure corrosive sublimate are precipitated by Kali Soda, washed and triturated and

of this precipitate 77.2 grammes are dissolved in the smallest possible quantity of nitric acid, Evaporated to consistence of syrup and brought to measure 1 litre with water. A given amount of urine is carefully measured in a graduated Pipette, Pour this into a beaker and add half the volume of the Baryta solution, filter and measure off 15 C.C, these 15 CC indicate 10 CC of the original ~~[illegible]~~ urine. Fill a Mohr's Pipette with the nitrate of Mercury solution to 0 and allow this to flow into the urine until a precipitate ceases to form. Draw off a drop or two of filtered mixture upon a watch crystal and add one drop of Liq. ferri if this remains clear add somewhat

more of the Mercury solution and test again, continue in this manner until after the addition of 1½ drops a visible yellow coloring ensues. The number of CC of mercury solution multiplied by 10 will give the number of milligram. of urea. There are in this method several causes for Error, the above test is given only for a urine containing not less than 2% of urea. Should this contain more than this amount, a smaller quantity of the Sol. of Mercury is used and it is advisable to dilute the solution approximately and repeat the test. If the urine contains less than 1% a greater amount of the Mercury Solution is necessary. In this case it is necessary to subtract for every 5 CC. mercury sol. employed and 3 CC.

1 C.C. from the amount total of Mercury Solution. Another source of Error lies in the Chloride of Sodium and it becomes necessary to remove it with Nitrate Silver. If the chloride amounts to only 10 or 1½ % in order to retain the urea in solution subtract only 2 C.C. from the number of Cubic Centim of the Mercury Nitrate. If the urine contain albumen remove this by coagulation. If Carbonate Ammonia decompose it with Baryta water and Evaporate the Ammonia If it be required to estimate the latter originated from the urea, litterate the urine with Sulphuric Acid and Estimate the amount of Sulphate of Ammonia.

Uric acid occurs partly free partly in union with bases and its amount varies from 0.2 gram to 1 gram in the 24 h

hours. It is increased in derangements of digestive apparatus, in most of the symptomatic fevers, as in diseases of organs of respiration and circulation. Its decrease is proportionate to that of urea and like it can be converted into Carbonate of Ammonia by the same means.

To determine the presence of uric acid from 100 to 200 grammes of urine are Evaporated (Albumen if present having been previously Coagulated) to a syrupy consistence, the urea and Extractive matter removed with alcohol, uric acid remains behind in presence with mucus and salts. On adding of this is saturated with Nitric acid the heated the precipitate is thereby dissolved. Evaporate off the water, back and redissolve residue remaining which moistened with Ammonia

(an excess being carefully avoided) shows the purplish red color of Murexide turning into a bluish purple when a drop of Caustic Potash is added. The other portion is dissolved in Liq. Potassa and an excess of Hydrochloric acid added, set aside, at the End of an hour uric acid will appear in microscopical Crystals. To estimate uric acid precipitate about 200-300 ~~grammes~~ C.C. with 2-3 grammes of Muriatic Acid and allow it to stand in the lowest possible temperature for 24 hours. The weighed crystalline mass is collected upon a previously dried and weighed filter, well washed with water, dried and weighed. Schunk has proven the existence of oxalic acid ($C_2O_4H_2$) with Ammonia in normal urine) which is a

a white acid and very slightly soluble crystalline powder, but which in combination with Ammonia is a soluble salt. If uric acid is dissolved in very dilute warm Nitric Acid, decomposing immediately when cold with Ammonia and crystalizing the solution by Evaporation, oxalate of Ammonia crystals are discovered. From a concentrated solution of this salt Hydrochloric acid will disengage oxalic acid as a white powder. If a drop of the solution of pure oxalate Ammonia be brought under the microscope and evaporated long prisms of the salt which are pointed at the Ends will be seen. They unite to form beautiful double plates or rosettes, If the salt be altogether pure, the plates will remain small and form bullet shaped masses which at the periphery are seen to be fine

crystalline needles. If to this mass a drop of Nitric Acid be added, the crystals will change into decidedly warty appearing masses of oxalic acid.

The chlorides appear mostly as Chloride of Sodium. In the mean they amount to about 15 Grammes in the 24 hours. They can however be increased in a healthy vigorous individual on active exertion. Their decrease is of special diagnostic importance and has been observed in all in which no chlorides were absorbed as in Cholera, acute types of Typhoids, Mania, in dissipated pathological processes, in abnormal transudations acute exudations as Pneumonia, Pleurisy, Peritonitis, Pericarditis, Endocarditis, Meningitis, Typhoid Fever, acute Tuberculosis &c. The disappearance of chlorides is characteristic when Pneumonia

succeeds Rheumatism. Their disappearance is so sudden that on the presence of the test used at a few hours interval, a decided alteration in the course of the disease will have been noticed. Qualitatively the presence of Chloride of Sodium is shown by acidulating urine with Nitric Acid, and precipitating by Nitrate of Silver, quantitatively, Liebig's test is the best We have already seen that Chloride of Sodium will split up in presence of Nitrate of Mercury into Corrosive Sublimate and Nitrate Soda, As long as the Chloride is present there is no precipitate of urea, but one drop above the point of saturation however will reveal a white cloud. As one Equivalent of Mercury requires one Equivalent one Equivalent of urea, the solution of Nitrate is prepared in such a manner that one cubic centimetre may require 10 Milligrammes of

of Chloride of Sodium. For the success of this test the Phosphates must be previously removed as in the manner of determining the amount of urea, A mixture of urine and Baryta water is prepared as in the test for urea which has a neutral or slightly acid reaction and Nitrate Mercury is added. At the first addition of the Mercury a cloudiness appears which however disappears upon agitation. By reading off the amount of Nitrate Mercury used, multiplying by 10 the result will give the amount of chloride of Sodium present in 10 C.C. urine.

Phosphoric Acid appears as acid Phosphate Sodium and as double Phosphates Lime & Magnesia. Alkaline Phosphates are present in inflammatory processes particularly in acute renal and spinal disease, lessened or absent in

in the neuroses, chronic spinal & renal affections, Earthy Phosphates are increased in Meningitis, especially in acute cerebral affections, in Rheumatism, diminished in renal lesions, spinal complaints and especially in Neuralgia.

If Ammonia be added to urine in excess Phosphates of ~~Ammon~~ Magnesium & Calcium are precipitated; the remaining Phosphates, if any are precipitated by neutralizing the Ammonia with Acetic Acid, adding Chloride of Iron which cause a yellowish white precipitate of Phosphate Iron.

The quantitative estimation of the Phosphates hinges upon the fact that the Phosphate of Uranium is insoluble in acetic Acid the minutest excess of the uranium salt produces a brownish red color with Ferrocyanide of Potassium.

Under certain conditions disturbing the balance between health & disease substances appear in the urine which in consequence of the altered condition of transudation are excreted by the kidneys or again those substances presenting themselves normally in the blood in consequence of the metamorphosis of tissues or produced by the tissues themselves. Under normal conditions the blood decomposes these substances In alterations from health these by their continued presence + increased amount or owing to the peculiar phenomena caused by the diseased condition decompose the constituents of the blood either not being themselves destroyed or merely forming isomeric compounds &

are eliminated from the kidneys.
The conditions under which albumen may appear in the urine are much more numerous than was formerly supposed, when the presence of this substance was supposed to indicate one peculiar diseased condition. Albumen appears in: Constitutional diseases as Hydraemia, Chlorosis, Anaemia, diseases of the heart and liver which by reason of the difference in pressure of the circulation, the albumen not being again absorbed by the tubuli uriniferi owing to the exfoliation of the mucous membrane lining these tubes ~~the al~~ appears in the urine. In diseases of the uropoietic system, as Typhus, Peritonitis and other inflammations producing hyperaemia of the kidney.

In idiopathic renal lesions as in Bright's disease, and Nephritis. In Haematuria which may be ~~caused~~ a hemorrhagic capillary Haematuria in which no coagula of fibrin appear, a hemorrhagic vascular Haematuria, in which a blood corpuscle is found and a serous haematuria in which no blood corpuscle is found but haematin is present as well as the albumen, if this appear in urine having a sp. gr. of more than 1.020 it is a symptom of Uraemia. Under 1.020 a corpuscle is seen but can be shown in a red colored albuminous urine by washing the cell. If however the sp. gr. is above 1.020, the presence of the haematine can only be explained by Carbonate of Ammonia, a symptom of uraemia, dissolving out the haematine.

albumen is often present in Pyuria. The acid pyuria is found in Pyelitis, Catarrh of Ureters, Nephritis &c. Alkaline pyuria indicates a vesical Catarrh which may be conjoined with the renal affection or may appear alone. When albumen which is secreted with pus in inflammations of the kidney, equals or exceeds in amount the albumen which appears in intercurrent capillary or vascular haematuria, this condition indicates what is known as Haematopyuria. Besides these various conditions albumen is found in many fevers, remittent & intermittent also in the exanthemata, in Pneumonia, Emphysema, Tuberculosis, after excess in eating or drinking and after the inhalation of Arseniuretted Hydrogen.

Sugar, has been announced by various authorities to be a normal constituent of the urine, which however is not universally accepted. Sugar appears as a permanent constituent only in one disease Diabetes Mellitus. An enormous amount of urine is daily excreted in this disease Even as much as 50 pounds containing large amounts of sugar. The urine has a sweetish taste and the clothing moistened with it, appear sticky as if covered with honey. The appearance of sugar in the ~~urine~~ urine is also a sequel of an injury to the floor of the fourth ventricle or irritation of the Pneumogastric. Sugar has also been found after a sudden suppression of the lacteal secretion, now & then in Diphtheria and in Cholera.

Thesis presented by
Charles C. Shippen.
February 17, 1879.

A brief review of the present aspect of Medical Science.

"Nisi vero, nil verum".

In selecting a subject for a medical essay to present for your consideration, in conformity with one of the requirements of graduation from the University of Maryland, I have been led to choose the above for two reasons. The first, because it is unreasonable to suppose that at this early day I should have accumulated sufficient knowledge & experience in matters appertaining to the clinical history of any particular

disease in the nosological calendar as to be able to give expression to any thing original connected with it. The second, because in the course of my lay & medical reading I have been struck with the many changes in the public mind in regard to the subject of medical science and also with the revolution that recent advances in the cognate sciences had made in the strictly medical mind. It is not without great diffidence that I enter upon such an undertaking, as the subject is one which requires handling by abler & deeper thinkers than myself, and I would therefore

ask your indulgence for any imperfections that more critical eyes may discover.

In instituting a comparison between the past and present merits of Medical Science, it might appear more fair to the memory of the past to pass in review the history of medicine from its earliest start up to the present moment. This would necessarily entail much time, much research. I shall confine myself therefore to the events of the past few years.

A very distinguished professor, Sir Wm. Hamilton, who a few years ago, is credited with having asked

the question (when reviewing the medical writings of Dr. Cullen) "Has Medicine advanced one step since the days of Hippocrates?" and, in vindication of his own belief in the negative conclusion, referred to the recorded opinions of several eminent authorities of modern times. The question so put no thoughtful mind is disposed to evade. Sir William fortunately was a professor of logic and not of medicine and the philippic which he hurls at medical science is partly to be accounted for by the fact that he exacted more general culture and classical attainments than adorned the medical profession

at that day. It is with the educated ignorance of just such men on the one hand, and uneducated ignorance on the other that the science of medicine has had to struggle for her very existence. As late as the latter part of the eighteenth century Hoffman wrote; "Fuge medicos, &c., si vis esse salvus." It is scarcely necessary to unearth the buried heaps of abuse that have beset the path of medicine. Under the circumstances the slow progress she has made is not to be wondered at. No one can deny that the science of medicine has not kept pace with her sister sciences, and the question is

pertinent as to the reason. The truth is that it is only within a few years that medicine has been lifted at all to the dignity of a science and found her proper niche. Let us enquire what constitutes medical science and we shall be better understood.

It is a multiple, so to speak, of many other sciences; the embodiment of almost every other science. The science of Anatomy, Physiology, of inorganic and organic Chemistry, the Study of Botany, the science of Physics, & I might add nearly every other known science, all contribute to make the structure perfect & complete.

Some have been disposed to rob medicine of her scientific character and to place her on the list of the arts. The learned Broussais held to this doctrine, and even the great Rousseau was wont to say: "I have an instinctive aversion to medical philosophies. I infinitely prefer to observe facts in all their details, to assemble & group them together and then to deduce from them some simple theory or practical inference".
Certainly neither of these great men of their day could have attained the eminence they did, and maintained their position in the ranks of their profession, had they not been

men of eminently scientific attainments. Their very scientific natures made the art a logical sequence.

I hardly think any one will deny the fact that there have been at various times many natural observers who have done the science of medicine a good turn without being guided by the light of scientific knowledge. But the thoughtful cannot but agree with me when I advance the broad proposition that to rightly apply the art, the hand must be guided by all the available means that the light of modern science brings to its aid. It is this difference now which is rapidly

dragging medicine from the deep sloughs of empiricism. As our test states, from truth nothing but truth can be adduced. The medical enquirer is now no longer satisfied with the meagre explanation that it is so because it is so, but is prompted by the means at his hand to read facts in the light of scientific and philosophical induction. "Poeta nascitur, non fit", may apply well enough to the bright lights within the domain of literature, but the popular phrase of being "born a doctor" must have something more substantial than mere popular belief.

Medicine, then being recognized

as a science embracing within its folds most of the other sciences, of which it is the simple expression, let us briefly present a short review of its present condition. The keystone upon which rests the whole superstructure of medical study and investigation — Anatomy — stands now as it has done for nearly two centuries, a monument of man's research and labor. It is only within the past half century that the application of the microscope has inaugurated a new era in this branch of enquiry. Histological Anatomy is daily revealing some new link in the general chain of facts that

contribute to the better appreciation of Nature's laws. With our increased acquaintance with the minute structure of the body, the sister sciences of anatomy, viz, Physiology, Biology and Chemistry, awaken a new interest, and open new channels of investigation and research. If disease is the antithesis of health the first cannot be rightly or approximately studied unless the latter is understood. Physiological investigation based upon experimental enquiry into vital processes is rapidly unearthing truths and facts from the great human laboratory that ripen into golden fruit in the appreciative eye of the clinical observer.

The science of Biology, the study of the natural laws of production and reproduction, though yet in its infancy, will, we predict, at some future day contribute vastly to the better understanding the normal and regular laws of Nature. It is a vast mystery, it is true, but the only true path that leads to the study of the laws of heredity.

The history of the Institutes and Principles of medical science embraces at the present day a knowledge of every department of pathological enquiry that can possibly contribute to the elucidation of medical facts. While the Principles of medicine require

the aid of Pathology for the interpretation of every departure from the laws of health, who can deny the fact that this aid the past few years, under the improved systems of enquiry, have not more materially contributed to the proper interpretation of morbid phenomena than ever before. The weakest chapter in medical pathology, i.e. the Etiology of disease, is daily becoming stronger.

While this knowledge is inapplicable to those hidden sources of disease which defy every known effort of modern research, and which we call the "Zymotic materies morbe" for want of a better name, still, the causation of morbid action is now

regarded from a more philosophical standpoint than formerly. The refuge in the idea of "cold" contributing as an essential element in the causation of disease no longer satisfies the keen appetite of modern research. The pathological investigator asks for something more, and must know the why and the wherefore — what role the effect of cold or heat plays in the mechanism of disease. This is a step in the right direction, and a step to be taken only by those properly trained in scientific research. The clinical value of all such knowledge is daily becoming more obvious, not only in the art of medicine

but also that of surgery.

Whatever Science contributes to the beautifying of Natures natural laws as applied to the human family, Pathology does to the reversed order of things. The term "malaria" is now almost a household expression. It means something certainly, but its true and logical place is not yet determined. We have not quite yet reached that point where this unknown factor can be translated into its exact meaning, so for the present the term "malaria" is good enough. But, though we cannot analyse it and reduce it to its exact entity, certainly much that is known of

its power is checkmated by the investigations of modern sanitary science.

Since the day when Laennec gave to the medical world the fruits of his observations upon the application of the physical laws of sound to the elucidation of morbid conditions, the diagnosis of those conditions has become a fixed law. With the progress which our knowledge of healthy vital processes has made our ability to recognize disease and to demonstrate its nature and to predict its results has more than kept pace. The diagnosis of disease rests now upon almost as fixed a foundation as the

laws that regulate the physical arrangement of the planets. Every element of knowledge and every possible factor is well weighed to ascertain what each can contribute to the forming a correct diagnosis and a proper etiological and pathological account of the clinical phenomena presented to the physician and surgeon.

The application of the laryngoscope — the application of the sphygmograph opens a new era in the history of medical diagnosis, each contributing material aid to the truthful interpretation of medical science.

As our knowledge based upon

scientific and logical deduction advances into the domain of the natural and unnatural aspects of medical investigation, as the laws of health and the factors of disease become better known, certainly it is reasonable to conclude that the means for securing the one and for counteracting the other will be better understood. The science of therapeutics, the "ars medendi", which used to be regarded as the embodiment of medical science itself, is daily assuming a more compact and definite shape.

It has long been known that the tendency of most diseases is,

to use a common place expression, to get well unaided by art. But often natures work makes such extravagant demands upon the life of the individual as to defeat her kind and laudable efforts. In the discrimination of those conditions where art can aid nature as far as practical medicine gives its "ultima Thule". The means seem immense, but only to the contracted eye. The vast storehouses of the materia medica are rapidly disappearing and becoming a history of the past. The shocks inflicted upon poor helpless human nature by the Sangrados of the past cease now

to be felt. The wholesale importation of drugs into the human organism has become a thing of tradition. And what has wrought this change? I answer, the light of modern medical research.

I have thus endeavored to draw a feeble picture of the present aspect of medical science, without entering into a descriptive history of the various elements that contribute at the present day to elevate her standing among her sister sciences. The tendency of the age is to investigate thoroughly, and to measure the merits and value of new scientific knowledge by the

nearness with which it approaches truth. Medicine is not far behind in this scrutinizing race. Whilst her enquiries have been beset with difficulties, she has been able in a measure to surmount many of them. Many of the dogmas of the past are rapidly passing away, and error is being supplanted by truth.

When we consider that the physician's labors are with those vital processes which constitute life, and when we reflect how those processes are affected by the physical and moral relations of the individual, it would be unreasonable to claim for a science the ac-

quisition of that which is beyond the grasp of human intellect.
Sunt certi denique fines quos ultra citraque nequit consistere rectum."

But whilst we may not with the means that we have attained this Promethean knowledge, who can foretell what another half century may not witness. The present outlook of medical science presents, I think, a bright and seductive picture, even to the most skeptical. The foreground may still bear the impress of the dark and rugged shades of the past, but the perspective stands out in bright and brilliant coloring with most significant

precision. Who at the present day gives more than a passing thought to the exploded theories of the fluidist and the solidist? Is there any one who yet clings to the mechanical idea of inflammation, save where the mechanical cause is apparent? I put these questions as they have suggested themselves to my own mind. There are many things in the science of Astronomy we can not yet explain, many things in the other sciences. The same may be said of medicine. But is it proper, or does it serve the ends of legitimate medicine for the sake of nothing better, to adhere to doctrine inconsistent with common sense?

The human body is one grand whole, regulated by laws just as well defined as any mathematical formula. The solid parts, in a physiological sense, and the fluids bear a reciprocal relation to each other, so that whatever interferes with the laws regulating the one will surely interfere with the healthy action of the other. The law of normal nutrition, on the one hand, with the regular growth of tissue is as well defined in its relation to health, as the abnormal overnutrition is followed by disease. With the better understanding the effect of disease, a more intelligent appreciation of the cause follows as a necessary corollary.

I do not know a better way of concluding this essay than by a quotation from a recent work of a very distinguished writer on theology, which reads thus: —
"Those who flinch from enquiry because they dread the possible conclusion; who turn aside from the path as soon as they catch a glimpse of an unwelcome goal; who hold their dearest hopes only on the tenure of a closed eye and a repudiating mind — will, sooner or later, have to encounter that inevitable hour when doubt will not be silenced, and enquiry can no longer be put by; when the spectres

of old misgivings which have been rudely repulsed, and of questionings which have been sent empty away, will return "to haunt, to startle, to waylay"; and will then find their faith crumbling away at the moment of greatest need, not because it is false, but because they, half wilfully, half fearfully, grounded it on false foundations".

— Acute Peritonitis —

H. Irwin Clark

The peritoneum is a serous membrane that invests nearly all of the pelvic and abdominal viscera and like the lining membrane of other parts is subject to inflammation, which disease is termed Peritonitis.—

Clinical history— Peritonitis may be developed gradually, occupying two or three days, but generally it is sudden and the disease soon declared. Pain over the abdominal region is a marked symptom, usually beginning at some particular spot and then radiating. The pain is stinging and lancinating

in character. It is increased at times so as to resemble that of spasm or colic. Deep inspiration produces pain, therefore the respirations are usually shortened and increased in frequency, the breathing being costal. Any movement of the body produces intense pain. Pain may be moderate or absent. Tenderness on pressure over the abdomen is marked, and usually present. The pain and tenderness are usually more intense at some particular spot, and they continue during the course of the disease. The patient is apt to lie

upon his back, with the lower extremities raised, so as to relieve the tension, and weight of the bed clothes. Tympanities generally present. Abdomen usually distended and tense, and this condition lasting during the entire course of the attack. Bowels usually constipated. Diarrhoea may occur secondarily, sometimes it exists first. Vomiting frequent and may be a prominent symptom. In the latter part of the course regurgitation is apt to take the place of vomiting. Thirst is present. Pulse apt to become quite frequent, numbering 120 to

130 per minute, it is sometimes only moderately accelerated. It is usually small. Prostration great. Perspiration apt to be present. Weariness and anxiety is depicted on countenance of patient. The upper lip may be elevated and drawn tightly over the teeth, when this is present this characteristic. Micturition difficult, due partly to paralysis of muscular tunic of the bladder and partly to loss of power over abdominal muscles, on account of the distention, and pain caused by the effort to micturate causes the patient to post pone it as long

as possible. The Catheter may have to used. Delirium may occur towards the termination of a fatal attack. Pathology Inflammation attacking the peritoneum,-. Causation. It chiefly occurs in puerperal women. As a spontaneous or idiopathic disease its rarely met with. Exclusive of puerperal Causation, it is chiefly caused by perforation of the alimentary Canal. The Ileum is some times perforated in Typhoid fever thus Causing it. It may be caused by ulceration and perforation of the Vermiform appendix. The

Stomach may be perforated by gastric ulcer and give rise to the disease. Injections of irritating substances into the uterus may cause it. The disease may be produced traumatically. The affections called Bright's disease may cause Peritonitis. Exposure to cold may bring on attacks.

Diagnosis. It is generally not difficult in the majority of cases, as the symptoms are generally well marked. It is to be distinguished from acute enteritis, Colic, abdominal rheumatism and lumbo-abdominal Neuralgia. The dis-

tinguishing marks between Enteritis and peritonitis are, the pain greater, the pulse quicker, there is more tenderness on pressure over the abdomen, more tympanitis and generally absence of diarrhoea in peritonitis, and acute Enteritis in the adult is less frequent: Secondly, pain in Colic not so continuous, tenderness on pressure is absent and in Colic the pressure rather relieves pain, prostration not so great in fact is wanting in Colic, also frequency of pulse. There may be some delay in the development of these symptoms

and the diagnosis will have to be delayed a little. Thirdly, the rarity of abdominal rheumatism will exclude it to a certain extent. Movements of the body causes pain all over the abdomen in peritonitis, while in rheumatism the pain is restricted to certain muscles, and perhaps to one side of the abdomen. In rheumatism deep, firm pressure may be made, without augmenting pain. Fourthly, Lumbo-abdominal neuralgia may simulate peritonitis very much in certain cases. The pain is severe, position on the back, lower limbs flexed

Patients presenting these symptoms are apt to be females more or less hysterical. Frequency of pulse and prostration are wanting in these cases. The tenderness on pressure in the neuropathic affection is more superficial, the patient shrinking from the slightest touch, but firm, prolonged pressure with open palm is well borne and may afford relief. Whereas in peritonitis the pain is always in proportion to amount of pressure. Muscular rigidity of peritonitis is wanting. The history will be the best guide in determining

the cause of the attack.

Prognosis. Acute general peritonitis is always a grave disease, involving more or less danger to life. Judiciously treated in uncomplicated cases, the prospects for recovery are good. In complicated cases, including under this head cases in which the disease is connected with gastric or intestinal ulceration, Bright's disease &c, the prognosis must be unfavorable. In cases of perforation, the disease may run rapidly to a fatal issue, destroying

life sometimes within a few hours. Recovery however is not impossible in cases of perforation, provided the opening be not too large, and closure be quickly affected by adhesions around it. The average duration in fatal cases is from five to six days. Mode of death is by asthenia. Unfavorable signs are denoted by progressive increase in frequency of pulse, great prostration, coldness of extremities, hiccough, regurgitation etc. Improvement as regards these symptoms referred, is favorable

with diminished rigidity of abdominal muscles and diminution of tympanites. Convalescence is slow. Mor or less tenderness and colic pains persisting during recovery. Treatment. Formerly the treatment depended very much on blood-letting and cathartics, both of which have been pretty much "laid on the shelf". Both of them are looked upon as doing more harm than good in this particular disease. By blood-letting, we diminish the patient's strength and the cathartics destroy

that perfect rest of the bowels which we should strive to maintain, therefore cathartics are not only devoid of good but productive of harm. The friction caused by the peristaltic movement of the intestines tends to perpetuate and intensify the disease and our great aim should be to keep these parts at perfect rest. If the patient should suffer from an accumulation of feces in the rectum, they may be removed by simple injections. To acquire this control over the bowels here

is nothing that can take the place of opium, which Professor Millenberger calls the "bonum Dei." To Prof. Clark, of New York, is due the credit of treating peritonitis exclusively with opium and he gave his drug, in certain cases, in enormous doses. But opium has been in use in the treatment of peritonitis for years in conjunction with mercury and blood-letting. Its action is to quiet the patient, keep the bowels at perfect rest and relieve pain, thus removing the most

important element of inflammation. It also assists in maintaining the continuity of the blood current and hinders the migration of the white corpuscles. Bartholow states a full dose of morphia given hypodermically at the out set of the attack, will in some cases cut it short. The treatment should begin with a full dose and its physical effect kept up, by regular use of smaller doses. Relief of pain is evidence of good effect of the opiate. Starting with the dose gr ¼ to gr ½ of Morphia for an adult

or its equivalent, of some other preparation of the drug. If required the opiate should be repeated at intervals of two or three hours, and in doses large enough to relieve pain. The narcotic effect should be carefully watched. The nurse should be minutely instructed to watch effect and if necessary to lengthen intervals between doses. Lastly the dose should be gradually diminished as the disease improves. The bladder should be attended to. Turpentine stupes applied over the abdomen are

very good. Cold applications may do good. Sustaining measures should not be neglected. Tonics, alcoholic stimulants and alimentation are to be depended upon. Alcoholic stimulants judiciously given are of the greatest utility at times. The free use of opium throughout the attack does not appear to condemn constipation, diarrhoea may even occur during its administration —.

Thesis

On

The Brain.

By

Andrew. J. Lemaster.

of Bedlington Berkley

County. Va. Va.

February

The 4th. 1879.

If I desired to dissect the human head, with the view of examining the brain, the first thing of importance that I would come in contact with after passing through the soft parts, external and internal tables of the skull, would be the dura mater. This membrane forms the internal lining of the cranium or internal periosteum, which adheres very intimately on one side to the internal parts of the skull, and becomes continuous with the pericranium by passing out through the different foramina at the base of the skull, and also forms the sheaths for many nerves that pass out through these apertures.

At the margin of the foramen

magnum it becomes continuous with the dura mater of the spinal canal. The dura mater is composed externally of fibrous layer or lamella and internally of a serous layer, this being the case we might term it a fibro-serous membrane, this membrane sends numerous processes into the cavity of the skull, the three most numerous are the, falx cerebri which descends into the longitudinal fissure, between the two hemispheres, the tentorium cerebelli which covers the upper surface of the cerebellum, also supporting the posterior lobes of the cerebrum and preventing their pressure upon the cerebellum, and the falx cerebelli a small triangular process of dura mater se-

-ceived into the indentation between the two lateral lobes of the cerebellum. The function of the dura mater is to support and protect the different parts of the brain.

After passing through the dura mater, the next membrane that makes its appearance, is a thin vascular one called the Pia Mater. It consists of a minute plexus of blood vessels, held together by a fine areolar tissue. It invests the entire surface of the brain, dipping down between its convolutions, and a portion of it is prolonged into the interior of the brain, forming there the velum interpositum and choroid plexuses of the ventricle cavities. It is found to vary in thickness in differ-

ent parts of the surface of the brain.

Next in order our attention is invited to that of the brain, which is not an unfolding of the spinal cord, but an entire separate organ situated in the cavity of the cranium. We find in the brain two kinds of substance, white and gray matter. The white matter wherever found, is for conducting impressions to and conveying impulses away from gray matter. If we examine the two matters of the nervous system a little more minutely, we find in the white matter first a sheath and inside of this is found the <u>white substance</u> of Schwann, but this substance does not conduct anything, but out of it we have coming

the central axis of Purkinje, this is the conducting part and is made up of white fibers; all nerves have this central axis, but all nerves do not have the other parts

The gray matter consists of nerve fibers and nerve cells, these cells are peculiar, because they have projections, this means no nerve cell lives by itself, but that it joins with other nerve cells; some of these cells are connected with nerve fibers, but there are no nerve fibers that are not connected with nerve cells. The function of the nerve cells is to receive impression and send out volition. The gray matter is richly supplied with blood vessels and connective tissue, The white matter is also supplied with

connective tissue, but poorly with blood vessels.

The brain is divided into four parts, viz, the cerebrum, cerebellum, pons Varolii and medula oblongata.

The cerebrum is divided into two hemispheres by the great longitudinal fissure, which extends throughout the cerebrum reaching down to the base of the brain in front and behind, but interrupted in the middle by the corpus callosum, which connects the hemispheres together. These hemispheres are covered by a thin layer of gray matter, it is in this gray matter which ends by an edge and is not connected with any other gray substance, except by white fibers that

we feel all sensations that come up from the body, and it is in this gray substance that we begin to send out motor influence, but this motor influence does not go on to the muscles uninterrupted, but passes by white fibers to the ganglia of the brain. When these fibers make their exit from the ganglia, they are found to be fewer in number than when they went in, after traveling a short distance they cross each other and pass on to the gray matter of the spinal cord, and from this point the nerves go out to the muscles. The sensative fibers come from the muscles to the gray matter of the cord and pass up the cord to the posterior part of the brain (crossing some-

where in their course, and differing from the motor-fibers by not passing through the ganglia of the brain.

But to return to the hemispheres of the cerebrum, we find them convex on their upper surface, level on their under surface in front and concave behind for the reception of the cerebellum. The two hemispheres are connected to the rest of the brain by the two crura cerebri. On the frontal lobe we have three convolutions of importance, the first, second and third, the third which is situated along the fissure of Sylvius on the left side of the brain is considered the seat of language both of words and gestures.

The Fissure of Sylvius is said to exist in all animals whose cerebral surface contain fissures, and is found to exist in the human feotus as early as the third month. On the outer side of the hemispheres this fissure presents an anterior and posterior branch. At the middle and anterior portions this fissure is very deep, and between its folds is concealed a projecting group of short convolutions belonging to the under surface of the brain, called the "Island Reil", it is also situated opposite the lenticular ganglion, it is thought to have something to do with articulate language. The fissure of Sylvius also separates the anterior and middle lobes of the

cerebrum and lodges the middle cerebral artery.

The next fissure of importance is the Fissure of Rolando, it is situated near the median line and runs transversely outward, reaching nearly to the median line of the fissure of Sylvius, dividing the frontal and parietal portions of the hemisphere. In front of and behind this fissure we have two convolutions of importance, for it is in these convolutions and about this fissure, that motor influence resides. After we pass one inch back of the fissure of Rolando motor power no longer exists. This far the greater part of what I have said goes to show,

that the surface of the cerebral hemispheres are especially connected with the manifestations of conscious intelligence; hence the result of injury, disease or disorganization of the hemispheres, is most always a disturbance, diminution, or suspension of the intellectual faculties.

As we have studied the upper surface of the cerebrum, we shall next take up for examination the interior of the hemispheres. If we were to remove the upper portion of the hemispheres, to about a half inch above the level of the corpus callosum, we would find the brain covered with a number of minute red dots or divided capillaries.

In inflammation or congestion, these spots become more numerous and of a darker color. By removeing a little more of the brain substance we come to the corpus callosum which connects the two hemispheres, and the interval left between its under surface, the upper surface of the ganglia and the parts closing the interpeduncular space, forms the general ventricular cavity. The upper part of this cavity is divided into two parts by the septum lucidum, and it is thus the two lateral ventricles are formed, which we shall next take into consideration.

The <u>lateral</u> <u>ventricles</u> are situated

in the interior of the brain and lined by a thin serous membrane, from which the cavity receives its moisture. There are two cavities one on each side of the septum lucidum.

The lateral ventricles consist of a body, anterior cornu, posterior cornu (also called digital cavity) and middle cornu. The part called the body is of triangular form situated beneath the corpus callosum and in its floor we find the following parts, viz. the corpus striatum, taenia semicularis, thalamus opticus, choroid plexus, corpus fimbriatum and fornix.

As we find here the corpia striata and optic thalami and on

the outside of the corpus striatum the lenticular ganglion, we will consider them together as forming the cerebral ganglia. On their edge we have a ridge of white fibers called the internal capsule, which is of so much importance that if slightly injured paralysis will occur and death may ensue. In the corpus striatum as in the thalamus the relation of the fibers to the gray matter is, in general, the same.

The exact physiological function of the cerebral ganglia, is not predetermined, but from known facts of pathology, we are certain that their influence is an important one, since in man, lesions of

these parts must always produce more or less complete hemiplegia on the opposite side of the body.

Between the corpus striatum and thalamus opticus, we find the taenia semicularis a semitransparent band composed of medulary substance. It is connected with the anterior pillar of the fornix in front and behind it becomes lost in the descending horn of the ventricle. In this part of the lateral ventricle we have the choroid plexus it is simply a margin or fold of pia mater. It has communication with the choroid plexus of the opposite side through the foramen of Monro.

The anterior cornu is of triangular form, and is bounded above and in front by the corpus callosum and behind by the corpus striatum.

The largest of the three cornu is the middle, it is situated in the middle lobe and is bounded above by the substance of this lobe and the under surface of the thalamus opticus. On its lower boundary or floor we find the following parts: the hippocampus major, pes hippocampi, pes accessorius, corpus fimbriatum, choroid plexus, fascia dentata and transverse fissure

The hippocampus major is a white eminence curved somewhat

like a ram's horn, extending along the entire length of the floor of the middle cornu. It is formed by the white convex portion of the convolution of the corpus callosum, projecting into the cavity of the ventricle. the gray portion remaining on the surface of the cerebrum, the edge of which is indentated slightly forms the fascia dentata At the lower extremity of the hippo-campus major we have an enlargement something similar to an animals paw, called the pes hippocampi

The pes accessorius is a small eminence of white matter situated between the hippocampus major

and minor.

Beneath the fornix we have the transverse fissure bounded on one side by the thalamus opticus on the other by the fornix. Through this fissure the pia mater finds its way from the exterior of the brain to the ventricular cavity to form the choroid plexus and velum interpositum.

The septum lucidum is a thin semi-transparent septum, which divides one lateral ventricle from the other and forms also their internal boundary. This septum is made up of two laminae, and between them we have a narrow space called the fifth ventricle.

it is lined also with a serous membrane and contains fluid. It is a separate cavity in the adult, but the septum sometimes becomes softened and partially broken down, then there is a serous effusion into the ventricles

As we view the parts beneath the corpus callosum, the first thing of importance that attracts our attention is a lamella of white fibrous matter called the fornix, situated beneath the corpus callosum with which it is continuous behind and separated in front by the septum lucidum. It is divided into two halves and where they come together is called

the body, but are separated from each other in front and behind to form the anterior and posterior crura.

The body of the fornix is triangular in form and is separated from the third ventricle by the velum interpositum.

The <u>anterior crura</u> is formed of white fibers, which pass downwards to the base of the brain; there the white fibers make a sudden turn upon themselves and form the outer part of the corpus albicantia, from this point they return to their corresponding thalamus opticus

The posterior crura pass down into the descending horn of the

lateral ventricle, its thin edges form the corpus fimbriatum. The foramen of Monro may be found between the anterior extremities of the thalami optici and the anterior pillars of the fornix.

The velum interpositum is a reflection of pia mater which passes from the exterior of the brain to the interior of the brain through the transverse fissure.

The third ventricle is bounded above by the velum interpositum, from which we have suspended the two choroid plexuses of the third ventricle. Its floor is formed by the parts that make up the interpeduncular space. Its sides

by the optic thalami. In front, by the anterior crura of the fornix and a portion of the anterior commissure; behind, by the posterior commissure, and the iter a tertio ad quartum ventriculum. In the ventricular cavity we find three commissures which cross it; from their position they are named, the anterior, middle and posterior. The anterior is a round white cord, which perforates the corpus striatum on either side. The middle is composed almost entirely of gray matter and passes into the optic thalami. The posterior commissure is composed of white matter and connects the two thalami optici.

The third ventricle has four openings; through the foramen of Monro we have the lining membrane passing into the third ventricle from the lateral, and from the third to the fourth through the iter a tertio, and ending in a cul de sac in the iter ad infundibulum. In the floor of the third ventricle, we find a great amount of gray matter. Behind the third ventricle we find the corpora quadrigemina and upon this rests the pineal gland, which contains a transparent viscid fluid and sometimes a sabulous deposit.

The corpora quadrigemina consists of four rounded em-

-inences, resting upon the peduncles of the brain, composed of gray matter. The deep origin of the optic nerve has been traced to the corpora quadrigemina.

In the canal leading from the third to the fourth ventricle, we find the valve of Vieussens, situated between the two processus e cerebello ad testes. It is composed of a thin lamina of medullary substance, on the upper part - we find a ridge called the frenulum and on either side may be seen the origin of the fourth nerve.

The corpora geniculata are two small oblong masses, placed,

one on each side of the corpora quadrigemina and are connected with the optic tract.

Turning to the base of the brain, as it comes next in order, we find in the intermediate portion of the longitudinal fissure a great transverse band of white matter the corpus callosum. It is connected with the tuber cinereum by a thin layer of gray substance, the lamina cinerea. You also see a broad white band on each side passing out from the under surface of the corpus callosum and extending to the fissure of Sylvius; these bands are called the pedunclas of the corpus callosum.

Next we would come to the lamina cinerea a thin layer of gray substance extending from the termination of the corpus callosum to the tuber cinereum. It also forms the anterior part of the inferior boundary of the third ventricle.

The olfactory nerve, with its bulb, may be seen on either side of the longitudinal fissure. At the roots of this nerve, we come to the anterior perforated space, it is of grayish color, and corresponds to the under surface of the corpus striatum; it is perforated by numerous minute apertures for the transmission of a number of minute straight vessels into the corpus striatum.

The optic commissure which is the point of junction between the two optic nerves, is found situated immediately behind the lamina cinerea, just behind the optic tracts and between them and the crura cerebri is the interpeduncular space, in this we find arranged in order the tuber cinereum, infundibulum, pituitary body, corpora albicantia and the posterior perforated space

The tuber cinereum is situated between the optic tracts and the corpora albicantia and consists of an eminence of gray matter. It forms part of the floor of the third ventricle and we also have projecting from the under surface of the

tuber cinereum a tubular process of gray matter the infundibulum

The next thing that we find in this lozenge-shaped interval according to order is the pituitary body, this is a small oval body situated in the pituitary fossa or sella Turcia of the sphenoid bone. It consists of two lobes and is a small reddish gray mass weighing from five to ten grains.

The corpora albicantia is placed immediately behind the tuber cinereum. It consists of two masses of white matter externally and gray matter internally, they are connected together by a transverse commissure of gray matter. These masses

are called the bulbs of the fornix, because they are formed by the anterior crura of the fornix, which after descending to the base of the brain, are folded upon themselves before returning or passing upwards to the thalami optici.

The posterior perforated space can be found between the corpora albicantia and the pons Varolii, it forms part of the floor of the third ventricle, and is perforated by numerous small orifices which transmit blood vessels to the thalami optici.

The crura cerebri comes next under our consideration, they consist of two thick round bundles of white

matter externally and gray matter internally, situated beneath the corpora quadrigemina. If we look up their composition we find them made up of three parts crust, locus niger and gray substance. Through the crust pass the fibers of the corpus striatum and lenticular ganglion and through the gray matter the fibers of the optic thalami pass conveying reflex action. Through the crura cerebri all sensation and volition must pass to and from the cerebrum.

Pons Varolii

The pons is situated between the lateral hemispheres of the

cerebellum. It is composed of both transverse and longitudinal fibers intermixed with gray matter. The sides of the upper surface becomes contracted into thick rounded cords, the crus cerebelli, which enter the cerebellum and there become its middle peduncles.

The function of the pons is thought to be that of sensibility and volition, when once destroyed the animal body is reduced to a helpless and unconscious machine, retaining respiration with circulation and some other reflex actions.

Medulla Oblongata.

It extends from the upper part of the atlas to the upper edge of the pons varolii and rests upon the basilar groove of the occipital bone. In front we have an anterior and behind a posterior fissure.

These two fissures divide the medulla into two halves these are again divided by grooves into the anterior pyramid, lateral tract and olivary body, restiform body and posterior pyramid

The anterior pyramids are situated one on each side of the anterior fissure, on separating the pyramids we find a decussation of four or five bundles of white matter, they do not, how-

ever all come from the anterior pyramids, but are formed mainly from the fibers of the lateral columns of the cord.

The lateral tract is situated between the anterior pyramids and restiform body, it is continuous with the lateral colums of the cord.

The olivary bodies are two prominant oval masses, situated behind the anterior pyramids, it is composed of white substance externally and gray matter internally, in the shape of a capsule with tooth like projections, open at the upper end called the corpus dentatum.

The restiform bodies are the largest columns of the medulla oblongata situated between the lateral tracts and posterior pyramids of the medulla. As they ascend they diverge and assist in forming the lateral boundary of the fourth ventricle.

The posterior pyramids are situated one on each side of the posterior fissure. They are continuous with the posterior median columns of the cord and consist of white matter.

In the lower part of the medulla we have the arrangement of gray matter similar to the cord. but in the upper part

of the medulla it becomes more abundant.

In the medulla oblongata we have the fourth ventricle bounded laterally by the processus e cerebello ad testes above and below by the seperation of the restiform bodies and posterior pyramids of the medulla. The roof is formed by the valve of Vieussens and the under surface of the cerebellum, the floor is formed by the posterior surface of the medulla and pons. The lining membrane of the fourth ventricle is continuous with that of the third through the aqueduct of Sylvius.

Next comes the physiological properties of the medulla oblongata, which pathological evidence goes to prove that it is connected directly or indirectly with the movements by which air and food are introduced into the body. It is said also to preside over the immediate muscular combinations concerned in the production of the voice

The Cerebellum

It is inferior in size to that of the cerebrum, and is that portion of the brain contained in the inferior occipital fossa. It is composed of

gray matter externally and white matter internally. It is not convoluted like that of the cerebrum, but consists of a number of furrows and ridges. The upper surface consists of two lateral hemispheres connected together by the superior vermiform process

The under surface is divided into two lateral halves by a depression called the valley, in this we have lodged the back part of the medulla oblongata, and from the floor of the valley we have projecting the inferior vermiform process.

The cerebellum is composed of gray matter externally which is penetrated by white fibers comming from the interior of the cerebellum. In the white substance of the cerebellum we have an isolated deposit of gray matter, folded in irregular tooth like projections, whence its name corpus dentata, it seems to occupy a place in the cerebellum analogous to that of the cerebral ganglia and to that of the olivary nuclei of the medulla oblongata

The peduncles of the cerebellum are the superior, middle and inferior, they serve to con-

-nect the cerebellum with other parts of the encephalon. The superior peduncles connect the cerebellum with the cerebrum, and the inferior peduncles connect the cerebellum with the medulla oblongata. and the middle peduncle connects the two hemispheres together.

The function of the cerebellum next attracts our attention. From pathological observation in the human subject; we are persuaded to believe that it has close connection with the power of coordination. It cannot be regarded however, as exclusively presiding over this function. Since there

is strong evidence that the posterior columns of the cord are in a great measure devoted to the same purpose.

I will conclude by saying something of the supply of blood to the brain. It is derived from two great sources, the vertebral and internal carotid arteries. The vertebral arteries come together and form the basilar artery, which divides again into several different branches, among which the most important are the posterior cerebral arteries. The internal carotid passes through the temporal bone and forms the

middle and anterior cerebral arteries.

The coats of the blood vessels in the brain are not as thick, and the vessels do not penetrate the brain substance and branch, as they do in other organs of the body, but run along on the surface of the brain dividing and sending capillaries into the substance of the brain.

The middle cerebral artery supplies the most important parts of the brain, one branch supplies the third frontal convolution, another the convolutions along the fissure of

Rolando and one supplies the ganglia of the brain. When this artery is affected we have a hopeless paralysis.

We can have one part of the brain in a state of hyperaemia, while another part is in a state of anaemia, as for instance when a person laughs, weeps or meditates on a certain subject the whole brain is not involved but only a part. From this we may infer that when a medical student fails to answer on his final examination, he is not able to supply that part of the brain with

blood, which holds in store the essence of all the valuable lectures of the past two sessions

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Scarlet Fever

Scarlet Fever (Scarlatina, Febris Rubra)

Definition A contagious [illegible] disease characterized [illegible] by a [illegible] function [illegible] to appear in usually [illegible] days and by an eruption of [illegible] "[illegible]"

Causal [illegible]

[illegible] was confounded with measles. Now [illegible] distinct disease [illegible] so recognized by all medical authorities. Its prevalence was independent of season or clime. Children [illegible] more [illegible] than adults, but that probably [illegible] cases of any special proclivity to it

[illegible] because of its great
fatality and highly infectious nature, and
the great number of people from exposed
to it, have it and to escape protection. A disease occasioning [illegible]
and highly mortal from [illegible] front
third to the fifth year of life [illegible] usually
assumes an epidemic form [illegible] and
then for months disappears altogether. Its
characteristics are more [illegible] than
most any other disease. Its epidemic may
be marked by certain distinguishing features
quite dissimilar to those of a previous
epidemic. It may in one case present an
ailment so trifling that the child carcely
ceases to play, and its illness discovered
only by accident, and in another case so
that the skill of the most eminent physi-

ica, with the aid of the most powe-
d-ful is unable to stay the course of t-
ort-t-time of this malady. The remarka-
-ble variations of the character, severity and
ty. plomes of this affection have given
rise to the following subdivisions—
Scarlatina Simplex - Scarlatina
Anginosa - Scarlatina Maligna.
Scarlet Fever - rarely occurs a second time
in the same person, yet second and even
third attacks [illegible] t occur
It is noticed that nurses who have had
scarlet fever, attending patients with
this disease [illegible]
scarlet fever, [illegible] time
[illegible] this [illegible] attack [illegible]
[illegible] scarlet fever is a disputed subject.
[illegible] say that it is a mixed attack

[illegible] contagion
[illegible] and [illegible]
[illegible] may be carried [illegible] distance
[illegible] almost [illegible]
[illegible] are noticed in all the large hospitals
[illegible] it is carried through the whole
[illegible]
[illegible] communication is carried on. It may
be carried in the clothes for months and
[illegible] It may
be transmitted by dressings, [illegible]
[illegible] the fluid of vascular
[illegible] vesicles beneath the skin of those
who have not had it. Women at parturi-
[illegible] to it [illegible] cases by
[illegible] apparently [illegible]
[illegible] The period when this disease

comes infectious is not well marked,
[illegible] as the fever develops itself, and that the
danger [illegible] of the rash and it is infectious until
the desquamation has been completed.
It may be latent in the system for proba-
ven to ten days, but the time of incu-
[illegible] is.

[illegible] 109 [illegible] To [illegible]
[illegible] may commence with a chill, but
not unfrequently it is wanting. Fever
is usually [illegible] (not [illegible]
chill) accompanied by such symptoms
as usually occur [illegible] [illegible]
[illegible] and [illegible]
[illegible] is an important diagnostic [illegible]

of the disease, [illegible] occur at the first [illegible]. Irritation of the stomach, [illegible] persistent, [illegible] indicates a serious form of scarlet fever and therefore is a prognostic of an unfavorable case. When this symptom is absent or we find only a slight nausea or [illegible] the case. The bowels are regular or a little constipated. If there is diarrhoea it is usually transient and very slight. Sore throat [illegible] appears [illegible] and the patient may complain of pain in the [illegible] sore throat, vomiting, the peculiar staggering [illegible], the scarlet rash, the great rise in temperature and increase in [illegible]

the pulse, are the most characteristic
at [illegible] this disease [illegible] not
its appearance on the second day. It
usually shows itself on the neck, face
and breast [illegible] (twenty four hours) will make its way over
the [illegible] extremities but [illegible] not
the [illegible] of the [illegible] for or
[illegible] and [illegible]
[illegible] or limbs and then extend to the head.
As regards the degree of [illegible] intensity
[illegible] cases differ widely, the rash in one
case may be so pale that it is hardly
distinguishable, while in others it is
of a [illegible] or scarlet [illegible] the
appearance is in minute dots, and these
coalesce forming irregular distributed
patches which disappear on pressure [illegible]

[illegible] redness, [illegible] t[illegible]
[illegible] slowly it is a sign of sluggish capillary circulation when the slowness of return is marked it indicates a malignant form of this disease. The redness is most vivid and remains longest in the alae nasi the skin is most delicate the ampulla, the gums and the surface of the [illegible] and thighs. In some fair cases the redness continues in maculas [illegible] which consists of minute rosy papules, due to the concatenation of the vessels and the points of inequality in the [illegible] the touch they are [illegible] in the condition known as [illegible] [illegible] of the skin. The [illegible] may [illegible] but the surface has a look of uniform redness.

Often the patches continue [illegible] for [illegible] and do not [illegible] the [illegible] face rarely has distinct patches or [illegible] but sometimes very irregular pink spots appear there. It rarely continues to disappear or to recur [illegible] and gives rise to an intense itching and burning. The inflammation [illegible] rapidly [illegible] and reaches its intensity on the third day and begins to exfoliate from the [illegible] the eighth day.

Exfoliation of the skin of the whole body occurs. It commences about the [illegible] and occupies several days before exfoliation of the epidermis of the whole body is accomplished. [illegible] the skin is thin it comes off in [illegible] but as on the palms of the hands or soles of the [illegible]

il [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible]. A cardinal rule is "Never think that
the disease is dangerous in proportion
to the abundance of the rash", or in [illegible]
of the most malignant cases [illegible] [illegible] [illegible]
rash at all.
In scarlatina simplex the rash may
hardly appear and the scarlet fever
develops on account of the disease, and
it may not be noticed at all. Notwithstanding
some unpleasant sequellae such as dropsy,
anasarca, albuminuria, or uraemia
make their appearance [illegible]
[illegible] children [illegible] scarlatina
[illegible] simplest cases are often marked
by the most unpleasant sequelae.
Cases are recorded [illegible] children
never went to bed at all, but were [illegible]

from the effect of the disease had
scarcely [illegible] and one case
[illegible] tioned the child became [illegible]
It is (even in its simplest form) a disease
in which we can not give a correct prog-
nosis of its [illegible]
Scarlatina simplex [illegible]
its course in about a week and is often
not followed by any [illegible]
or the disease [illegible]
as not to be noticed if the patient is
possible could not have
disease [illegible] most danger is to be
apprehended from rheumatism [illegible]
nia and other complications. In
young infants this disease [illegible]
comes [illegible] or [illegible] may

cases a rash without any [illegible]
or fever and were it not for the preva-
[illegible] of an epidemic of this disease at
time we would [illegible] doubt
it. Infants under two months old
are not liable to have it; Some writers go
so far as to [illegible] that
months old never have it.

Scarlatina Anginosa — In this form of
scarlatina the violence of the disease
[illegible] the throat
[illegible] are swollen and suppurate during
the fever, [illegible]
urano [illegible] deposit [illegible]
[illegible] ; or may turn from white to gray
and then assume a brownish cast and
at last come away and tear [illegible]

[illegible] as a acrid [illegible] fluid,
[illegible] cause a stomatitis, or [illegible] eustacian
[illegible] cause [illegible]
[illegible] coming and [illegible]
[illegible] declared to come from the
[illegible]. The swelling of the palate and
tonsils may be so great as to cause
[illegible] patient refuses to take its medicine or
[illegible] as to cause death by suffocation.
[illegible] is [illegible] obtained and as
[illegible] a strawberry like appearance, pe
[illegible] to this disease, caused by its p

[illegible] gin as [illegible] clinic [illegible] the [illegible]
gut tal coats el. [illegible] on [illegible]
dry and cracked.
The [illegible] contr[illegible] co[illegible] [illegible]
[illegible] urine scanti and dar[illegible] coloured.
[illegible] rash vivid and covering the [illegible]
[illegible] [illegible]
the neck swell and become [illegible] hard,
[illegible] [illegible] [illegible]
[illegible] abscesses [illegible] the rash has disappeared.
Scarlatina Maligna — here the disease
commences with a death dealing blo[illegible]
at once [illegible] [illegible]
[illegible] tion in the morbid cause of the dis-
ease. [illegible] [illegible] lab[illegible] [illegible] depres-
sion, so intense, that no reaction follows,
or the eruption instead of [illegible]

[illegible] or disappears and [illegible] ds this life.

[illegible] 106° [illegible] or cold. The case may start with [illegible] s, with marked; vomiting [illegible] and [illegible] and [illegible] before [illegible] time to develop itself, or the [illegible] of the throat has been noticed. [illegible] the patient may at once count [illegible] to the muttering, [illegible] improvement, occa[illegible] [illegible] occur [illegible]

d itself the patient may recover; but
[illegible] occurs [illegible] can [illegible]
[illegible] prognostic [illegible]
death may take place in a few hours
[illegible] coma supervenes, from continued
[illegible] stration [illegible] from hemorrhage of the
[illegible] ach; or diarrhoea may cause death
[illegible]
[illegible] cat [illegible] ation
is hurried and shallow [illegible]
debility [illegible]
[illegible] impression [illegible] pale;
and the patient is conscious [illegible]
pathological [illegible] post-mortem
examinations reveal that most [illegible]
[illegible] the
kidneys are somewhat [illegible] than nat
ural, and the [illegible]

ated. In malignant cases the sma

hypostatic co

surface of the internal or

gans.

[illegible] chicken broth [illegible]
[illegible] articles. In fact if there is [illegible]
[illegible] of the throat, swallowing will
[illegible] so difficult that the patient was
[illegible] able to take any but fluid
[illegible] nourishment. In mild cases the
[illegible] treatment is a trial of
[illegible] In addition to cooling drinks, venti-
[illegible]tion and nourishment, we have
[illegible] measures to [illegible]
[illegible]
[illegible]
[illegible] demanded [illegible]
[illegible]
[illegible] for the [illegible]

[illegible] character, [illegible]
[illegible] may [illegible]
[illegible] at. With the desire of [illegible]
[illegible] getting [illegible]
[illegible] inches likewise [illegible] into disuse,
[illegible] nevertheless they may be used
[illegible] great [illegible]
various gardens may be used with
[illegible] effect for the [illegible]
[illegible] and regular
[illegible]
[illegible]
[illegible]
[illegible] advantage [illegible]
[illegible]
[illegible]

[illegible] to a married dog [illegible]
[illegible] septic canals are recommend[illegible]
[illegible] salt, and their value can
[illegible] acid, in the strength of quart
the ½ of water is recommended, but
[illegible]
[illegible] d. Carbolic acid in [illegible]
it [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] dard garglee for the [illegible]
[illegible]
[illegible]
[illegible]
[illegible]

[illegible] and then covered in [illegible]

[illegible] the throat and keep the [illegible]

[illegible] patient [illegible] we can still use antiseptic [illegible]

[illegible] palatable) in [illegible]

[illegible] or even cold [illegible]

make a marked reduction in temper-
at[illegible] by d[illegible] at d[illegible]
esis. [illegible]
[illegible]
[illegible]
[illegible]
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[illegible]
[illegible] in the incident
[illegible]
l's disease. So this most
means of reducing the temperature and
[illegible] by water by the pack-
ing. [illegible]
and [illegible] doubt by a [illegible] it
produce diaphoresis [illegible]
[illegible]
[illegible] or 4 months [illegible]

[illegible] and [illegible] attack
[illegible] is [illegible]
[illegible] surface is warm and it also
causes [illegible]
[illegible] The carbonate of ammonia
[illegible]
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[illegible] time [illegible]
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[illegible] and [illegible]
[illegible] troubles occurring [illegible]
[illegible] case it is considered
[illegible] use them. [illegible]
[illegible] temperature, aconite [illegible]
[illegible]

for the same purpose, but
especially to reduce the temperature
and allay the inflammation of the cas-
with from ½ to 1 watts of carbolic acid
½ is higher recommended by Dr.
[illegible] [illegible] [illegible]
[illegible] inunction, as it is cooling and
[illegible]
[illegible]
[illegible] must use the most stimulating
treatment that can be given. Ammonia
in alcoholic stimulants, such as
whey, milk punch and egg
[illegible]
large doses to cause active diaphoresis
as well as to stimulate. The [illegible]

[illegible] t can [illegible] inhale [illegible] [illegible] t
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] teeth, as hot as can be borne by the
[illegible] [illegible] There is a tendency t
[illegible] [illegible] adjust [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] should be treated in the same
[illegible] [illegible] care. The otorrhea of scarlatina
[illegible] [illegible] should be treated with antiseptic washes,
[illegible] the ear should be washed out with
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] prescription [illegible] [illegible] recom-
[illegible] [illegible] [illegible] by [illegible] [illegible] Carbolic acid,
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

scarlatina. This scarlatina broke
out in a family to sick around be spa-
tied [illegible] by
vious attacks of scarlatina [illegible]
[illegible] t [illegible]
e acute till a drunkes is set in the t ord
t's pupils sightly dilated and t [illegible]
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- Yellow Fever -

S. J. McCain -

1879.

— Yellow Fever —

With the loss of twenty thousand lives and the expenditure of millions of dollars during the epidemic of 1878 in the south, no one, however old or young, should offer an apology for an opinion on a subject of such vital importance.

An opinion, based on what is deemed good authority, is a plausible excuse for an error contained therein. — In the animal economy, with man for its representative and philosopher, the produce of two minor divisions, — Cause and Effect, has been adopted: — In examining this all-important subject we must not disregard the additional clinical phases offered by some of our ablest medical authorities; and with a degree of con-

-vence this subject will assume three divisions, viz:—

1st Animal, or vegetable impurities as a cause.

2nd Yellow Fever as an effect.

3rd Final developement of the cause.

In studying the cause of Yellow Fever we must regard and note its period of incubation, especially directing attention to the extremes of heat and cold, and the atmospheric condition of moisture, coupled with other hygienic surroundings and the almost invariable want of proper drainage of the locations in which we find the disease. That these are the con-ditions presenting that produce Yellow fe-ver seems evident because it is an abnormal effect, (and this is shown by its not being epidemic each year.) produced by an abnormal cause. Excessive heat

is not characteristic of each summer, nor is extreme cold characteristic of every winter; and we find no proof that yellow fever actually follows the one or the other, unless in conjunction with another, and evidently great cause, for its prevalence: then, we must direct our attention to these, as the co-operative causes of yellow fever, — heat, cold and moisture, and their conjoint action in its propagation.

If it were produced by cold, the northern states would be more subject to it than the southern; but its decrease and final extermination by the approach of cold, autumn weather, leaves us but the conditions of heat and moisture to examine. From the fact that moisture is readily absorbed by the vegetable kingdom, succeeded by rapid vegetable decomposition, under heat

and from the fact that the essential, or Idio-
-pathic fevers are the immediate consequences
of long continued heat, it is reasonable to
conclude that Professor T. D. Bell, of Louis-
-ville, Ky, was correct in his statement that
vegetable material and moisture are the
causes, and heat the exciting, or developing
cause. To be more explicit, we will quote the
language of this eminent scholar, —
"that the daily temperature of 75° Far: for
three months, acting on moist vegetable
material in a state of decomposition, will
develope yellow fever". Prof^r Bell also
claims that "a daily temperature of 60° Far:
for two and one-half months, acting on
moist vegetable material in a decompo-
-sing state, will produce Remittent fever".
Then the assumption that yellow fever
and remittent fever are produced by the
same morbid conditions, is an assumption

calling for analogy.

First, noting the difference between the producing and developing causes of these two diseases, we have, —

Yellow fever caused by 75° of heat, acting for three months on vegetable decomposition:—

Remittent fever caused by 60° of heat, acting for two and one-half months on vegetable decomposition: the difference being 15° Far: and one-half a month of time.

Next, we will notice the analogy of the symptoms, —

Yellow fever has excessive jaundice.

Remittent fever has jaundice.

Yellow fever has excessive lumbar pains.

Remit^t fever has lumbar pains.

Yellow fever has albumen in the urine continuously.

Remit^t fever has albumen in the urine in the cold stage.

Yellow fever is accompanied with copious hem-
-orrhages, not only from the mucous surfaces,
but also from abrasions of the skin.
Pernicious remittent fever has hemorrhages
from the various mucous outlets.
Yellow fever has black vomit.
Pernicious remit.t fever has black vomit.
Yellow fever has an enlarged spleen. (As shown
by T. C. Summers, of Nashville, Tenn, in au-
-topsies held in Memphis, in August 1878.)
Remittent fever has an enlarged spleen, at
times, and chronic intermittent fever
has, almost invariably.

What does this comparison show?—
that the little word <u>excessive</u> can be
appropriately applied to every true case
of remittent fever and cause it to assume
similar phases to yellow fever.

Pathologists have long since decided
a majority in favor of the supposition that

certain essential fevers (remittent and intermittent for example.) are caused by a morbid state of the atmosphere known as malarial:- If then, malaria shows itself on the subject thus poisoned, by producing jaundice in Remittent fever, it is reasonable to conclude that the excessive jaundice of yellow fever is produced by malaria in a more active and perilous form. T. O. Summers, of Nashville, (whose investigations we are forced to accept.) in his autopsies on yellow fever, declares through the press, that the only organic change, in the cadavers examined, was an enlarged spleen, and that it was three or four times its normal size.

All admit that intermittent fever is caused by malaria:- What is its sequel in a great many cases?- Anemia, debility and markedly an enlarged

spleen. If then, malaria enlarges a man's spleen who has had chills and fever, all, whose minds are free from popular prejudice, every one whose desire is to investigate without regard to a formal ism, must, in order to get the true path-ology of yellow fever, study the ultimate and more dangerous effects of malaria.

With a brief summary of what has been shown, we must conclude that remit-tant fever is a mild effect of malarial poisoning, amenable to treatment, and that yellow fever is a severe effect of malarial poisoning, not amenable to treatment in a majority of cases.

From the foregoing, it may be presumed that this article denies any distinction, except in the severity of the one, and com-parative mildness of the other, - between yellow fever and other malarial fevers, but

m will admit there is great difference, as pointed out by Prof. T. S. Bell, and others, referable to the Kidneys and revealed by their microscopic examinations; and in my opinion, this is the only one. Confessing my igno-rance as to the true nature of this difference, (being unacquainted with the use of the microscope) I give my opinion that what-ever may be the changes in the Kidneys, they are still only due to the pernicious effects of malaria. My inexperience gives little weight to this opinion, but it is diagnostic, both as to nature and cause, in the hands of those whose ability and experience justify experiments.

We will now examine the third division of our subject, — The further development of the Cause. —

Upon this sentence hangs the controversy of the medical world. — Does this great

plague exist as a living germ, or does it sway the sceptre of destruction only in the form of impurely impregnated air? — There seems to be a line of demarcation between the Northern and Southern climates, that cannot be more sensibly appreciated than in noting the diseases peculiar to both. Remittent an Intermittent fevers are unknown in the extreme Northern states, from the fact that their admitted causes do not exist. Since yellow fever does not visit the northern states as an epidemic and is the only epidemic restricted to the South (indeed cholera, diphtheria, variola, varicella and dysentery equally affect both climates.) we must conclude that its nature is intimately connected with the predominant feature of the south, known as malaria, and, more or less felt by all its inhabitants. History, with Medical writers as historians, tells us that diphtheria is parasitic with reference to nature and cause: it also

tells us that diphtheria is truly a contagious dis-
-ease, without respect to persons, climate, or
locality. It would be a bold step in a new
and inexperienced writer to attempt to affirm
that diphtheria is not parasitic and con-
-tagious: It would also be presumption to
deny that a diphtheritic patient could go from the
excessive heat of the south to the regions of the
extreme north and give diphtheria to those
with whom he came in contact. In all parasitic
diseases, it is evident that the parasite causes
its contagion. If diphtheria is parasitic and,
hence, contagious, must we not conclude that
if yellow fever is parasitic, it must also be
contagious? — Does it seem possible that the
parasite in the one case causes contagion, and
in the other, does not? — Yet, writers now
contend that yellow fever is a parasitic
disease, and also positively affirm, with
sufficient evidence, that it is not contagious.

Malaria is an endemic cause producing endemic disease:— We learn from medical writers that malaria cannot cross the smallest stream:— but every District of the South, having heat and moisture acting on vegetable matter, can generate a cause sufficient to make it endemic all over the South. I must conclude that Prof^r T. D. Bell is right, and that the true cause of yellow fever is filth of all kinds, vegetable decay, improper drainage and hygeinic enactments; and that it is developed from impregnated atmosphere only, by Solar heat.— If this is an error, I hope it will be eradicated.

S. J. McCain

A Thesis
on
Yellow Fever
by
Frank T. Lincoln
of
Georgia.

February 1879.

In order to treat this subject rationally, a suitable subdivision is necessary, and following that which suggests itself most naturally to the mind, I have divided it into the following heads: Etiology or Causation, Symptoms & Clinical history, Anatomical Characters, Prognosis and lastly Treatment. It is my purpose to take up these various heads, in the order in which they have been enumerated, expending upon each, what little information I have been able to obtain by research, and to state what opinions I have formed upon them.

Etiology.

The causation of fallen tissue

always has been, but especially at the present is, a matter of rash and engrossing importance not only to the medical profession alone, but to the whole country in general. For prevention, which is the only safeguard, all treatment being for the most part unavailing, is almost impossible unless the origin is known. I think that it is now allowed by all investigators that this disease is a manifestation of the system, of the reaction into it of a poisonous contagious germ, whether animal or vegetable in the present state of knowledge it is impossible to say. This seems

to be supported by several facts, which render it almost undeniable. In the first place, he fever is destroyed and an epidemic put an end to, by the temperature causing frost, which certainly seems to point to some form of life. Again the ease and readiness with which it is transported from place to place indicates a material existence and not a vitiated state of the atmosphere, alone, as has been supposed by some.

The question at the present time is, whether it is capable of originating per se in this country, whether it is indigenous, or whether the presence here is to be

accounted for by the theory of importation alone; a question, which, in spite of all the investigations of various learned, sanitary commissions, appears now, no nearer a settlement, than formerly.

It seems in my poor judgement, that this fever is a natural product in the lower southern states, although the contrary is now the generally accepted theory. The conclusion that it is indigenous to this soil, is based upon the fact that not a year passes, but that a larger or smaller number of sporadic cases come under the care of physicians in all parts of the country most com-

monly subject to its influence, while at the same time there are no signs of an epidemic, and none ever appear. Now this would seem to set aside the theory of importation being the sole cause; for in order to account for these isolated cases, we would be obliged to have importations of the germs every year, which most certainly does not happen; or else they must originate on the spot. Hence the conclusion seems irresistable, that the germs or fomites of the disease are always generated during the hot season, in those parts of the country below a certain latitude; but that their development into an active poison

is dependent upon certain peculiar conditions of the atmosphere. What this condition exactly is, is very difficult to say; but all former experience seems to point to intense heat, and dryness of the atmosphere; combined with a bad system of drainage, as the most important factors. This theory appears also to explain the presence of isolated cases occurring from year to year; it being possible that some individuals may be unfortunate, or be in a condition to develope these germs (in their system) which would else wise remain perfectly innocuous. In regard to contagion, although not

the sole mode of propagation, the disease is allowed by all to be contagious to a considerable degree. To support which see its confinement to cities and thickly inhabited localities; also the fact that it generally begins in one quarter of a city, and extends over its entire area by a gradual advance; and again the presence of one infected person, will nearly always contaminate an entire household before totally expunged.

Symptoms &c.

The onset of this fever is generally very strongly marked, and very abrupt. The prodromal symptoms being usually of so trivial a nature, as to be entirely overlooked or disregarded

by the patient. Before the inception of the chill, which in most cases forms the first active symptom, the patient experiences slight wandering pains, in the back and loins, a ~~the~~ feeling of general lassitude and weariness, and a peculiar burning thirst, which the greatest quantity of water will not satisfy. These symptoms gradually increase until they culminate in a chill, or which is quite as common, a high fever. The pains which have been wandering before, now concentrate themselves in the lumbar regions and across the brow just over the eyes, the eyes themselves also assume their characteristic smoky hue, and there is

combination with a peculiar flowing or inflated pulse, give the chief diagnostic points of a true Yellow Fever. Derangement of the stomach, and vomiting, generally accompany the ~~para~~ dening stage, but are by no means constant. The fever continues a length of time, in proportion to the severity of the case, but rarely for longer than three days. From all the works, it appears that patients never die during the febrile movement but only after the paroxysm has been subdued, and what is known as the period of calm has set, but from what little experience I have had, I believe that they generally do die in the febrile stage, with an accompanying black

vomit, and that when they safely pass this stage, will be good nursing & they generally recover. If however, death does not occur until after the subsidence of the fever, it appears to be due to a general failure of the circulation. The pulse becomes slower than is normal, the skin cold, and in some cases even capillary congestion takes place, and finally vomiting ~~starts~~ a clear and transparent fluid, gradually becoming darker, until it assumes that peculiar well known "Coffee grounds" appearance, and which gushes without the slightest effort, from the mouth and nostrils of the patient, who shortly passes into another world, apparently suffering neither in body or mind.

(1) symptom, which usually accompanies fatal cases is a suppression of urine; in fact in the late epidemics which have occurred in the south it was almost a constant factor of all cases ending in death. In regard to nervous symptoms; the mind is generally clear throughout the whole course of the disease, unless attended by the complication just mentioned, namely, a suppression of urine, which gives rise to uraemic poisoning, convulsions and coma. But in all cases of black vomit the last hour or two of the patient's life is passed in a state of complete collapse and stupor, probably due

in the immense loss of blood. The third stage, which in fatal cases is one of collapse, in those, which terminate in recovery is one of convalescence, the patient slowly regaining health and strength; and unless a relapse of the fever occurs it may be considered a termination of the disease. In cases of relapse the same train of symptoms are gone over again with the exception however of a fatal result in ninety nine cases out of a hundred, it being almost as rare a thing for the case of relapse to recover, as for one of black vomit.

Anatomical Characteristics.

There are no peculiar anatomical characteristics in this disease, with, perhaps the exception of the discoloration of the liver, which assumes a peculiar yellow or boxwood; all the post mortem appearances being evidently accidental. The intestines in some cases have reddened and softened, and the large black spots, supposed by some writers to be gangrenous. But none of these are constant, and hence pathologists of the present day, are as much in the dark as those who have preceded them, as to the causes of the phenomena in

ible during life. The characteristic vomit of this disease has been the source of considerable inquiry, and difference of opinion, but it is now the generally accepted theory that it is blood changed and decomposed by the gastric fluids, and this is to be inferred from the fact that the same changes can be produced external to the organ, and also that the blood found in the system does not produce these changes.

Prognosis

In different epidemics, as a matter of course, the per cent of deaths varies, ranging any

where from two up to seventy five.
The most fatal symptoms are extreme yellowness of the skin and conjunctivae, delirium suppression of urine black vomit and coma the last three, almost always portending death. A favorable prognosis can never be made in any case as unforseen accidents are liable to occur at any time causing a fatal termination. But acclimated persons bear it better than foreigners, dark skinned persons better than blonds, and adults better than children. In those cases which do not die from uremia, caused by suppression, the mode of death is from asthenia.

Treatment

The treatment of this malady has always been, and will probably continue to be, unless greater strides are made in the science of medicine than there is any reason to hope for, a matter of much discussion and great difference of opinion. There is not, in the present state of our knowledge any drug which has the slightest claim to specific virtue. Many have vaunted the value of Quinine, but, as experience shows, without the slightest ground for so doing, fully as many cases, if not more, dying under its use, as when it was omitted. In fact the drug is said by some writers and practitioners

to be, not only of no value but on the other hand, decidedly injurious. Dr Stillé in his work on Mat. Med & Therapeutics states this as his opinion. We are then reduced, simply to a treatment of the symptoms as they occur. It is the general practice for the physician, as soon as called, to administer a mercurial purge, Calomel being the best form, and to ~~administer~~ promote the action of the skin by hot mustard foot baths, repeated every two hours, if necessary, also to apply mustard plasters to the epigastrium. This may seem to be routine practice, but experience has shown it to be by far the most efficacious mode known

the Mercury relieving the congestion of the liver, and torpor of the bowels, so common to the fever in its incipiency, whilst the pediluvia promote the action of the skin, and the external applications procure a certain amount of revulsion, drawing the blood to the external organs. The attention should be directed to lowering the heart's action, and for this there is no better remedy than Tr. Aconi Rad. combined with the Neutral Mixture of the U.S. Dispensatory, which latter acts as a vigorous diaphoretic. In cases of gastric irritability, counter irritation over the epigastrium, Ice-cloths and the dilute Hydrocyanic Acid

are all useful. To check or prevent black vomit a number of astringents and haemostatics have been used with varying success, but one which I saw exhibited by my preceptor in a number of cases with markedly good results in Enteritis; I have never seen the remedy mentioned by any writer on the subject, but it seemed of so much use that it is certainly worthy of a more extensive trial, than has yet been allowed it. Some physicians have advocated cold baths, and affusions for lowering the temperature, but these seem to me to be two vital objections to such methods. first they would interfere with that absolute rest, so essentially ne-

essary to the safety of the patient; and secondly: They would have a most undesirable and fatal tendency to drive the blood to the internal organs, from which, the physician is most anxious to keep it. In suppression of urine, diuretic remedies are indicated, and, blisters over the hypogastrium. In regard to diet, during the paroxysm of fever, and quiescent stage following, it is necessary to support the patient, but at the same time, to tax the powers of the stomach as little as possible. For this purpose, we have nothing better than the preparation known as Valentine's Beef Juice; this given alternately with a mixture of Lime Water and Milk, or rice

champaigne, or wine which forms an excellent nutritive and supportive diet. Should the stomach be unable to bear any of these, they should at once be withdrawn, and nutrition administered by enema. If the physician has reason to believe that there are malarial complications, then Quinine is indicated, but until then it is of no use, although administered by some practitioners in every case, by thinking that simply because there is a fever this much abused drug will cure it, and they pour it down until sometimes the unfortunate patient dies deaf and blind from its excessive use. The subject of prophylaxis of Yellow Fever is

at present agitating the whole country, and such measures are being taken as to lead us to hope, that if the disease is of foreign origin alone that its propagation may henceforth be prevented. Disinfectants are always brought into use in Epidemics, but late experiences have led to doubts as to their efficacy. But until their useless has been fully proved they should continue to be used. The only means of absolute destruction of the germs or fomites, or whatever may be the cause, is cold; and hence it would seem advantageous to subject all suspected articles of merchandise, the holds of vessels to a temperature at or below, the freezing point which could be very

Easily accomplished, and would be of infinitely more value, than the use of the numberless, ill-smelling disinfectants of doubtful value —

Thesis.

An

Inaugural Dissertation

Submitted to the examination
of the
Provost, Regents, & Faculty of Physics,
of the
University of Maryland,
for the degree of

Doctor of Medicine,

Intermittent Fever.

This is a disease characterized by the occurrence of febrile paroxysms in regular succession, and by the absence of fever between the paroxysms; The period intervening between the end of one paroxysm to the commencement of another is called the intermission, and the whole period occupied by one paroxysm and the succeeding one is called the interval,

There are three types the quotidian, tertian, and quartan, the quotidian occurs every twenty-four hours, tertian every other day with an interval of forty-eight hours, quartan every third days with an interval of about seventy-two hours.

There are other types mentioned by authors such as the quintan, sextan, septan, and octan - the last occurring at intervals of a week but they are very rare and it is doubtful if there has ever been a physician who has seen them.

The quotidian is sometimes double, having the paroxysms every day, there is also a double tertian and a daily-paroxysm but occurring at different times and with different character on successive days.

The paroxysms of alternate days correspond with each other, thus the paroxysms on the first day are the same as and

continue until the third day, and then will occur in the afternoon. There is also a duplicated or double tertian that is going on at different times in the twenty-four hours. The triple tertian has two paroxysms every other day and one on the intervening day, that is, three instead of one in forty-eight hours. There are other varieties that are mentioned but are mere refinements of the enthusiastic observer and to my mind of thinking they have no more foundation than the mind imagination of observers. Each paroxysm of an intermittent often quite regular and fully

formed consists of three stages
the cold, hot, and sweating,
which succeed each other in the order
mentioned.

Symptoms, The fever is seldom
formed at once as various premonitory
symptoms are observed before it has
fully set in, that is called the
forming stage of the fever,
the first symptom is a sense of
lassitude or weariness attended with
yawning and stretching, the muscles
feel sore as if bruised, there is often
a soreness in the limbs pain in the
back, chilliness, and often a delirium,
pain in the head, and loss of appetite,
the skin is somewhat depressed and

the patient often complains of a
[illegible] of decay of which he is
at a loss to account, in other
words he suffers with general malaise,
The person is seized with the above
symptoms which in a few hours
pass off without much attention
being directed to them, is taken the
next day about the same hour
with the same feeling, and generally
a pronounced chill will accompany
it, It sometimes seized the patient in
the midst of apparently good health
without any warning whatever
In the [illegible] stage the patient
complains of great stiffness in the
limbs and in a short time the

whole body felt as if streams of ice water were trickling over it, the teeth chatter and the bed had been known to shake from the violence of the chill, The hands are shrunken, the features contracted the countenance pale, the tips and ends of the fingers often purple There is also a great desire to drink although the tongue be pale, Independently of tremors allusted to there is often great neuralgic pains in the back loins extremities and often in the head. The cold stage may continue for some time and again may pass off very soon.

Hot Stage, the passage from a chill to the hot stage is not abrupt, rigors for a time alternate with heat, the heat is very agreeable to the patient, the heat is felt about the face and temples and gradually spreads over the whole body. If, during the hot stage the limbs are moved into a cool spot in the bed, chills will be felt vibrating disagreeably through the frame, at length the cold stage having entirely passed away universal burning heat takes its place, the cheeks are flushed the eyes sparkle, and the surface becomes moist and

distended and the temperature of the body is increased the thermometer having ranged as high as 105 degrees, the pulse is more frequent than in health and is full and strong, in some cases when the state of the system is adynamic it is at once frequent and feeble. All the secretions are diminished, the skin is dry and hot the urine scanty and often high colored, convulsions are not unfrequent in children, at the commencement of the hot stage and may appear and disappear with the fever, during the cold stage. [illegible]

upon the face and breast gradually spreading over the whole surface, it is sometimes very slight but generally very copious. Upon its first appearance the person will feel somewhat relieved, and the febrile symptoms gradually abate as it advances, the skin becomes cool the excitement of the circulation subsides the mouth is moistened, the headache disappears and the p[illegible] generally falls into a gentle and refreshing sleep. The kidneys then resume their function and in the urine which is discharged there is often found a brick dust sediment or coating.

Paroxysms are liable to other deviations, sometimes the cold stage is very slight, and exhibits few of its characteristics, these are not uncommon where the only premonitory signs are a little chilness about the wrists and cold ears, hands and feet, occasionally these symptoms are wanting, ~~and~~ and the hot stage set in immediately without any chill preceding it, this is called dry ague. To distinguish it from the more common form from a shaking ague after the paroxysm had ceased the patient is by no means free from all symptoms

disease, there are hunger pain in the back and loins and some fur on the tongue, a poor appetite and sallow complexion, which however diminish with the nature and of the disease and at length apparently disappear, the patient not unfrequently having the appetite, digestion, and general vigor, though not perhaps the aspect of good health, having the interval, Unchecked intermittent will produce very dangerous effect the most common being enlargement of the spleen, the blood which leaves the capillaries becomes congested in the venous extremities,

in the spleen which is probably intended as a diverticulum to prevent injury from such irregularities of the circulation to more important organs. The enlargement of the spleen subsides somewhat in the apyrexia but returns in a greater degree with the succeeding paroxysm, in some instances it is so excessive that the spleen extends from the abdomen and may occupy half of the cavity—, it is more or less indurated and is called ague cake, and is a well known affection in miasmatic districts. It is more common in the quarta and less so in the quotidian.

The stronger the disease the more apt it is to be attended with affections of the spleen, dropsy may occur from this disease caused by the vicarious secretion in the cellular tissue and serous cavities. This has been more frequent after the intermittent has been interrupted. The anatomical character of intermittent fever has scarcely been ascertained. The lesions which have generally proved fatal and which are the [illegible] are not [illegible] part of the fever being [illegible] only incidental, Inflamation of the brain and its membranes

cerebral congestive and effusive
gastritis gastroenteritis, pulmonary
inflamative and congestive,
diseases of the liver and spleen
are among the most frequent
[illegible] who have labored under
intermittent fever, the liver has often
been found congested and the
blood under it black.
The cause of intermittent fever is
miasmata some have supposed
that all cases of intermittent
have the same origen but this
is not correct we every now and
then meet with a case which
can by no possible means be
traced to miasmata [illegible]

have been known to arise from temporary irritation, such as the introduction of instruments into the urethra, indigestible food in the stomach, etc. Intermittent fever is most common in the latter half of the summer, and autumn before the occurrence of severe frost. Sometimes it appears epidemically occurring in places it has never been known to frequent. In the country it is met with in every place where there is vegetation except near the mountains. Children, and old people, are less frequently attacked than those of intermediate age.

women less than men, partly because they are less exposed to the cause, children are certainly liable to it in a tender age. It has often been known to affect the foetus in the womb, as is indicated by periodical trembling in the uterus.

Diagnosis, The only disease that intermittent fever is liable to be confounded with are remittent and hectic fevers, hectic fever may easily be distinguished by the irregularity of its paroxysms. Remittent fever is hard to discriminate from the fact that the fever continues during the whole interval and sometimes it is very hard to

circle which variety of the disease the case can be classed under.

Prognosis. The prognosis is almost always favorable. without there is some malignant tendency, some authors state that there is a disposition to cerebral disease and when so, apoplexy may be the result. There are other instances of fatal effect from congestion or rupture of the spleen. The chief danger of intermittent is chronic enlargement of the liver and spleen and there is often difficulty of treatment. In a great majority of cases the fever requires very

treatment and sometimes
when left to nature no serious
harm is apt to ensue, but again
there is a time when remedies
are necessary. During the chill
the patient should be put in
bed and covered warmly, and
hot drinks should be given. Heat
may be applied externally, if the
chill be severe vapor baths may be
employed. When there is great
prostration indicated by pallor
and feeble pulse the patient should
be stimulated by administering
carbonate of ammonia (½ gr.)
turpentine externally and perhaps
quinine [illegible] in doses of grs.

bent. Emetics may be given when there is much oppression of the stomach and mucus the bowels should be evacuated and then you should begin with Peruvian bark or one of the preparations, The most valuable of these is the Sulphate of Quinine, you should administer it in sufficient quantity to produce the full effect & should be always administered immediately after the paroxysm, if the patient complains of the bladder you should continue the quinine as if in a case of that the disease has not left the system.

There is said to be a normal amount of Quinidia in the system so it is supposed by some authors but they have failed to be confirmed and consequently the theory has not gained the attention of medical professors,

I cannot dismiss this subject without expressing to the medical faculty of the University of Maryland my warmest acknowledgements for the able manner in which they have conducted the present course of lectures and also for the kind attention they have manifested toward the medical students, particularly

their studies and encouraging their labors,

John Snape Mathias

A Thesis

on

Typhoid Fever

By

Charles F. Johnson

of West Virginia

1878-79

Typhoid Fever

Typhoid Fever is a continued febrile condition, [illegible] characterized with morbid intestinal [illegible] connected with the [illegible] of the intestines. [illegible] its approach is insidious and its peculiar characteristics are man[illegible] [illegible] [illegible] [

[illegible]

[illegible]

[illegible] is not always present to [illegible]

stated being a disease affecting the [illegible] of the intestines. The intestinal symptoms [illegible] are invariably present in all well-marked cases.

Synonyms

Its synonyms are numerous in the [illegible] of the [illegible] of the Germans, the Intestinal Fever of the English. In this country it is usually called Typhoid Fever, sometimes Enteric Fever. We prefer the former appellation because it is more general use.

Transversal Chancroid.

Relations seen to the Tubercles on mucoid slough in the enlargement of spread. Tr. to effects are invariably [illegible] show the solitary and agminated glands of the intestines. Absence of this evidence would exclude typhoid fever. The examination of these glands in the early stage of inflammation [illegible] slightly swollen and raised above the level of the surrounding mucous membrane and are much more vascular than in health. That the elevation of these glands is due to their hyperplasia or enlargement is [illegible] established by [illegible]

[illegible] proof. Following this increased turgidity is a breaking down of the swollen mucous membrane and the formation of circular or ragged ulcers with a central depression. If the ulcers are numerous and deep there is often a coalescing and the formation of a continuous large patch. If the inflammatory process is not vigorous [illegible] or gangrenous, perforation of the intestine is not liable to occur. But if the ulcerative process extends through the muscular coating or beyond that result. It is now that the solitary glands are most [illegible] affected. The mesenteric and mesocolic glands are usually also

appendicitis grows very [illegible]
[illegible] [illegible]
[illegible] [illegible] [illegible]
-able to the degree of intestinal [illegible]
-tion. The Spleen is very much [illegible]
-ted in most [illegible]. The [illegible]
-ally participating in the inflammatory process going on in the system.
Its morbid manifestations are not constant. sometimes it [illegible] [illegible]
abnormally accelerated. [illegible] [illegible]
its action as far as can be [illegible]
is almost suspended. The bile is gen-
-erally thinner and less viscid than
in a healthy state. [illegible] of a
dark or dirty [illegible] color [illegible]
-taining its normal color. These
changes and processes before described

[illegible] are constant in typhoid fever and while there are in different cases many other signs still they are not constant and uniform enough to enter into the description of this disease

Symptoms

The succession of sym[illegible]

[illegible]

The majority of cases is insidious. [illegible]

[illegible]

[illegible] at night [illegible] with a

[illegible]

The urine is diminished in quantity, high-colored, [illegible]

[illegible]

[illegible] is not constant. [illegible]

There is retention of urine with [illegible] frequency [illegible]

[illegible] may become [illegible]

Ceri

Frequent sponging of the body with [illegible]

It is some [illegible] to quench the [illegible]
and [illegible] the [illegible]. Obtains [illegible]
[illegible] restlessness. Should [illegible]

[illegible] be administered [illegible].

[illegible]

Starch and [illegible] are [illegible]

be given

20 gtts in

every hour or two. Stimulants and

ishment play an imp

easily digest

ie carefully noticed, and care should be exercised in injecting. Redness [illegible] at times would elimination. Should the urine become distended with urine the catheter should be at once emp-
-ty and the [illegible] and submitted to a careful [illegible]
. In suppuration the [illegible]
-ies. A favorite remedy is a jorti [illegible]
of Digitalis [illegible]
[illegible]. [illegible]
at times [illegible] the [illegible]
[illegible] of the [illegible]
-ness of the red and scalent. [illegible]
[illegible]
-ce [illegible]
[illegible] the vessels disinfected. [illegible]

[illegible]

-ber as this must [illegible]

[illegible] many important facts

which make this literature

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

-ans as such [illegible]

[illegible]

[illegible]

special use of the [illegible]

[illegible]

[illegible] to the board.

[illegible] competent physician and [illegible] man who is constantly endeavoring to [illegible] the sufferings of his fellow-[illegible] is worthy of the confidence and respect due to the members of this [illegible] profession.

Respectfully [illegible]ted.

[illegible]

The Management

of

Natural Labor

by

[illegible]

Management of Natural Labor

[illegible] the practice of Medicine should attend strictly to his professional duties and assume responsibility only when called pertaining to the practice of Medicine and supposing to all [illegible] practice.

It is my object in this Thesis to [illegible] point out some of the duties of the physician in the practice of midwifery. He will often be called to his great annoyance be called to the bedside of his patient long before labor has commenced but he should always attend promptly, [illegible] unnecessary [illegible] and get [illegible] to be an [illegible] anything abnormal at an early period.

upon our arrival at the house we should not intrude too abruptly into the presence of our patient but should make our presence known as gently as possible for fear of arresting the progress of labor, on entering the chamber we should endeavor to draw our patient and her attendants into a conversation on some subject other than that which may then occupy their minds giving us an opportunity to learn the frequency, force if not character of the pains, from this conversation we may base our future course, after we have been made the acquaintance of our patient and her attendants we should be enabled to make our examination, we proposing this especially in women who are in labor for the first time we should

never forget the consideration which is due to the feelings of the patient. It is her fault in life for it cannot be otherwise than that a woman must be [illegible] such an examination as is necessary by a person of the opposite sex with feelings of aversion if not with abhorrence. but if the necessity be first explained to her in a few kindly words she will seldom fail to appreciate the good feelings that dictate them and will submit without a murmur to what [illegible] may be necessary for her comfort and safety.

In making an examination it is necessary to have the patient in a convenient position and the [illegible] performed in the kindly manner [illegible] the [illegible] position

and near the edge of the bed, the
date of confinement but sometimes we
find a patient that can neither lay on
the left nor the right side then it is
necessary to allow the patient to lay in
the position that is the most comforta-
ble to herself after we have the patient
in the most convenient position (which
is the one first mentioned) we proceed
to make our examination, the index fin-
ger of either hand (some prefer the right
and some the left hand) should be oil-
ed with some unctious substance and
assuming a very gentle pressure on
the perineum and gently entering
the vagina it is passed upto the Os
Uteri, it is usual to elicit a period of
pain for the examination but if so the

finger must rest quiet in the vagina until the pain has subsided for fear we should rupture the membranes and evacuate the waters, what we are to learn in this first examination is of great importance in our future management of the case we should ascertain if the OS is soft and dilatable or rigid and unyielding and to what extent it has become dilated if at all, we should ascertain if the membranes have ruptured and whether we have to deal with a natural presentation and if there is any pelvic deformity OR scalps of the child, and we also learn if the vagina is soft and relaxed and well lubricated with mucus. If we find the parts all in a state of relaxation and well lubricated

with mucus and a natural secretion we may rest easy for the time but on the rupture of the membranes and the evacuation of the waters we should make another examination for the purpose of more surely than before to determine the presenting part or portion of fetal if we find on this second examination everything as it should be we should inform our patient of the fact but the physician should be very cautious how he expresses his opinion on this subject the young practitioner should avoid making to frequent examination as it is calculated to remove the lubricating medium and to irritate the parts and thus an impression on the minds of the patient and her attendants that he does not fully understand the case and may cause

some uneasiness in their minds and seriously interfere with the progress of the labor and probably convert a natural labor into a lingering or instrumental labor.

There is certain articles of the physicians armamentarium that he should look upon as indispensable and he should never leave his office to attend a patient in labor without. These consist of an elastic catheter opium in some form I should prefer the sulphate of morphia (although some authors recommend other preparations of the drug) and a quantity of the fluid extract of ergot this he should never be without. Bromide of Potassa and chloroform and if he is going any distance

take the forceps although I consider this unnecessary for the reason that we must generally have plenty of time to send for them if they should be needed. The physician should always carry with him some cotton or linen tape for ligating the cord and a pair of blunt pointed scissors for separating the child from the mother he should also give a general glance around the room to see that all is in readiness and that everything is provided that is necessary for the comfort and safety of his patient. He should see to that the nurse, (if there is one but in a country practice you rarely find one) has a supply of soft cotton cloths, napkins and abdominal binders. On the appearance of

the termination of the first stage of labor the pains usually become more severe it is then advisable for the woman to go to bed. previous to this however she should see that the bed is prepared this should be neither too hard nor too soft but made as comfortable as circumstances will admit upon this should be spread a piece of India rubber sheeting, and a sheet folded to about the useful width so as to cover that part of the bed upon which the pelvis of the woman lies as the liquor amnii and other discharges escape this sheet may be pulled through and by this simple arrangement our patient will have a dry bed to lie upon and upon the termination of the labor the sheet may be removed with final discharge

and the patients clothes being fumigated which has been previously rolled up for the purpose of keeping them dry that will be left as comfortable as could be expected under the circumstances upon the rupture of the membranes and the evacuation of the waters we should make an examination as stated above and if we find everything as it should be and the pains regular and strong we may expect a speedy termination of the case.

The patient is usually encouraged to bear down before the rupture of the membranes and the evacuation of the waters this is unnecessary and should be forbidden as it is not only useless but injurious but as soon as the waters are evacuated the fingers of

profession commences then we should encourage the woman to wait for off of the act of the abdominal muscles most patients women will do this without any instructions to do so but sometimes she will cry out - and perhaps then we should prevent such as the pains are unusually severe by explaining to her the necessity of her postponing good use of her pains and not wasting her strength and powers by crying and bellowing she will easily fail to appreciate the good feelings that prompt the advice and wait therefore for every possible moment that is in her power to wait with the exception of her child, as the force progresses and the head descends it is not

supposing that the anterior lip of the os remains in an abnormal condition this is caused by pressure of the head against the symphysis pubis this we should endeavor to push up above the head by gently elevating it on the tip of the index finger in the absence of a pain and holding it until a pain comes on this is deemed by some authors but I have done it in one case with perfect success, as the later proceeds the head will come to pass against the perineum then it becomes our duty to take our seat at the bed side, for the purpose of supporting the perineum but not as Dr Ramsbotham recommends where he says "place your thumb against

the bed regarding it as a fixed point and allow the pressure to be borne against your hand" but for the purpose of affording a gentle support by placing the palm of your hand, guarded for the sake of modesty and cleanliness with a soft napkin, over the perineum with the index finger extending towards the transverse along the labia majora and allow the perineum to be gently forced against the hand by this pressure we may detect the head of the child forwards towards the hypogastric region and by simply moving the finger we may watch the progress of the head during the labor, as the labor proceeds the contractions become stronger and the pressure against the perineum greater if this

should exceed the normal force so as to endanger the integrity of the parts or should it not will be safe to remove and encourage the patient to cry out lustily during the height of a pain or in other words make free use of the safety valve of the glottis, at every pain the head of the child will advance and at the termination will recede and in this way will finally come to pass over the distended perineum at this period the suffering of the patient is intense but as soon as the head has passed the woman will experience great relief and express the feeling by words of praise or crying or laughing as the may feel inclined. as soon as the head has passed it is our duty to pass a finger around the

neck of the child is constricted the cord
is immediately if possible slipped down
over by means of the fingers and to
release it - and if this is not possible we
should keep it as loose as we can to prevent
any danger to the child from suffo-
cation if we find the cord is wound
the neck we may cut it - but cut it
to release another loop unless the
mouth will be on the ground we place
the child in the most suitable position
as will enable it to breathe if respiration
does not commence immediately we
may excite it by blowing on the face
or a slap on the nates or tossing it
on the hands this procedure sometimes
fails to excite the respiratory muscles
to action if it should fail [illegible]

must resort to the bath warm or cold or alternately as the case may require this however will necessitate the separation of the child from the mother if the child should breath as soon as it is born which is most generally the case we may separate it at once which is done in the following manner as soon as it is supposed supplied with enough dressers we place the first ligature about two inches from the navel of the child and a second one about one inch or one inch and a half from the first and divide the cord between the two ligatures the object of the second ligature is to prevent further bleeding of the bed linen and in case of twin pregnancies to prevent

the loss of blood and danger to the life of the Second child, the child being Separated and handed to the nurse there only remains now to complete the third Stage of labor the delivery of the placenta it is considered good practice to administer a full dose of the Fluid Extract of Ergot at the termination of the Second Stage of labor this insures firm contraction of the uterus and prevents post partum hemorrhage, if we have followed the second of the lessons with our hand upon the fundus eternally it will not be long ere we find the placenta in the Vagina but if it should not pass so readily we should avoid all pulling on the cord for fear of adherent

placenta and the danger of inverting the uterus the way to wrap the cord around the fingers of the left hand and use it as a guide to the U & and as a general thing we will have trouble to take the mass as a whole along with the membranes, when the placenta is there in cending away it is a good plan to knead the abdomen with the open hand with the fingers towards the symphysis pubis which will rarely fail to excite the uterus to contraction expulsion of the placenta there is always more or less haemorrhage but this should not excite alarm for there is always a discharge from the uterus the lochia which should go on and continue for some days as long as the patient rests

is regular and full we should not have
any fears but a weak and quick pulse
is indicative of danger. Now in case
we are satisfied with the contraction of
the uterus and that there is no abnormal
discharge escaping from the vagina
we may proceed to make our patient as
comfortable as circumstances will ad-
=mit of. This we do by removing the
sheet previously spoken of and arran-
=ging the bed as best we can. The abdomi-
=nal binder has created considerable
difference of opinion among physi=
=cians but not much among women
for you will scarcely find a woman
that is willing to do without the binder
it is a belief prevalent among them
that it aids materially in restoring

their former shape and I think may
that a binder properly applied does no
harm if not good in this respect however
I think we should humor our patient
in anything that we know is not injur-
ious to them but the binder is useful
in other respects it supports the abdominal
walls and probably aids in keeping
the uterus in firm contraction. The kind
of binder I prefer myself is one in the
shape of the letter T this should be applied
with the bitch and it generally falls
to the lot of the physician to apply it
especially in a country practice when
in fact he has nearly all to do
that would fall to the lot of a good
nurse, the binder should be drawn
firmly around the body of the patient

and prized the advantage of the T shaped binder is that it can be brought between the thighs of the patient and aid in keeping the napkin in its place which should be applied after the termination of the third stage of labor this should be a soft dry piece of linen, applied over the vulva, after the hand has passed through with attending to our patient and probably before we will be called upon by the nurse to dress the baby's navel this needs by taking a soft piece of linen and either burn or cut a hole for the stump of cord to pass through and we make a pad that will press over the umbilicus taking care to wrap the cord up in the pad in order to keep it off the edemas of the child this done

the hand should be applied to the uterus but not however neglect the patient to long at a time lest there should be a relaxation of the uterine walls and we should loose our patient from post partum haemorrhage as long as we can feel the uterus firmly contracted behind the symphysis pubis & above the edge of a child's head we may rest assured that there is not much danger from haemorrhage the patient must be strictly prohibited to maintain the horizontal position lest haemorrhage should ensue & it is hardly necessary to give the patient any stimulants as the distinctness usually rallies in a short time if it is necessary a little brandy in sweetened water will generally answer every purpose it is

advisable for the physician to leave the house until he is satisfied that there is no danger from post partum haemorrhage an excellent method to prevent this is to put the child to the breast early and furthermore this aids in drawing out the nipples if at the expiration of an hour the uterus is still firmly contracted and the pulse normal we may venture to leave our patient for the present with the cautions that she must not be disturbed or be allowed to raise up lest haemorrhage should supervene and with the promise to return in a short time,

Respectfully Submitted by
A. Bruce Bannelle

Feby 1879.

A Thesis

on

Therapeutics.

Respectfully submitted to "The Faculty of Physic" of the University of Maryland.

By

Louis B. Nabors.

Baltimore, Feb. 5th, 1879.

Therapeutics.

Introductory Remarks.

It may elicit a smile from the astute and veteran therapeutist to see a candidate for graduation in medicine take as a subject, out of which he proposes to elaborate a thesis, the one set forth above, namely: Therapeutics. Be that as it may, certainly it is a subject sufficiently general to furnish abundant material; sufficiently deep to call into requisition the fullest play of analytic acumen; sufficiently controverted, obscure, and contradictory in the exegetical efforts emanating from the mental laboratory of therapeutists in all ages, as to leave the writer in company with many who have been wandering in labyrinths of whose

intricate ways they had no clear knowledge.-

On reading a synopsis of medical opinions, as elaborated by leading medical minds from Hippocrates down to Virchow, the student of medicine is dumbfounded at the mighty mass of conflicting theories confronting him with their various claims to his credulity; and, at the threshold of his medical career, he shrinks from entering a field where confusion runs riot, where chaos seems to reign, and where he must assume the fearful responsibility of dealing with human life.-

In the dark picture thus presented to the students mental vision, are there no forms of relief; no bright spots; no facts which have not only remained but brightened under the manipulations of the anatomist, the physiologist, the

pathologist, the chemist, and the therapeutist, whose labors have spanned the long interval of centuries? Yes; there are truths, facts coming down to us through the revolution of long years of earnest, tireless, patient toil, which, when collated and fastened firmly in the stocks of therapeutical science, arrest our attention, appeal to our judgment, defy the controversion of our logic, and command our assent by the accumulated testimony of authoritative experiment.

After reading the works of various authors on the subject of therapeutics, and being favored with a series of clear, logical, and admirable lectures upon the same subject from the "Chair of Materia Medica and Therapeutics" in the Medical Department of the University

of Maryland", it would be strange if the writer had formed no opinion or opinions of his own upon a subject where various theories disport their respective charms.

To a presentation of his views, the writer now addresses himself, pleading a patient hearing and a charitable criticism from all who may chance to peruse his feeble effort, seeing that it is a subject upon which some of the cherished maxims of the wise of past ages have been proven to be foolishness by the light of advancing medical knowledge.

Definition.

Therapeutics is from the Greek Therapeuō, which signifies, "I wait upon, I alleviate, I attend upon the sick."

Such being the signification of the parent verb, the noun derived therefrom, and which gives name to a branch of Medicine, must partake of the specific idea inherent in the verb. Therapeutics, then, as applied to Medicine, is "that part of Medicine, which has for its object the treatment of disease". It is also defined, "the department of Medicine which comprises an explanation of the modus operandi of medicines". We thus have two features presented to our minds in the scope of therapeutics as a branch of Medicine, namely: First, The treatment of disease; second, An explanation of the mode by which medicines operate in the treatment.

The Argument.

From the above definition, it

follows that the physician who, through remedial agents, treats disease, is a therapeutist; but it is equally evident that he is not an intelligent therapeutist unless he knows <u>what</u> his medicines will accomplish, or ought to accomplish, towards curing his patients. I have not said that he should know the <u>modus operandi</u> by which his medicines accomplish their work, in order to be an intelligent therapeutist. I did not say so, because it would be demanding of the physician a <u>measure</u> of intelligence not warranted in the present state of therapeutical science. The fact is, that enlightened experience and careful observation in the use of medicines in various pathological conditions, have been the means of accumulating a vast fund of <u>clinical</u> knowledge respecting

the curative properties of many medicines, whilst the modus operandi of the medicines in bringing about the cure has remained in obscurity, or has been the subject of conflicting expository efforts.

Of what advantage, then, are the researches of the scientific therapeutist? Much in every way; for his researches, taking clinical facts as the point of departure, may bring to light the hidden laws of medicinal action, and thus either narrow or widen the range of, or fix in their proper sphere, remedies which seem to be vacillating in their therapeutic scope. Already some valuable remedies have attained, apparently, their proper sphere through the channel of scientific investigation chiefly, and afterwards confirmed by clinical experience.*

*ury and opium, for instance. Scientific experimentation reversed these agents in their therapeutic scope; narrowing former, and widening the latter. This is especially so inflammatory conditions.

Unfortunately for the theoretical therapeutist, and the cause he espouses, clinical experience in so many cases does not bear out the antecedent theory respecting the modus operandi by which a given remedy will work a curative result; and hence the antecedent theory, respecting the ability of the given remedial agent to meet and overcome the pathological condition, is subjected to a degree of ridicule not comfortable to the promulgator of the theory. This lamentable failure of a priori theory and after clinical experience to harmonize, has led many physicians to rely chiefly upon blind empiricism; and others (wiser ones) to trust solely to the "enlightened empiricism" of clinical observation. Now, it seems to the writer that, if therapeutics must rest solely upon the so-called "enlightened em-

icism" of clinical experimentation, humanity must suffer seriously in the working out of such a system. It seems more reasonable and safer to combine antecedent theory* with clinical observation; and, with these mutual safe-guards, establish a rational system of clinico-scientific therapeutics. The truth is simply this: Well authenticated clinical facts respecting the curative properties of medicines, are of infinitely more value to the physician, than any theory of the modus operandi by which the medicines are supposed to effect a curative result; but, that when theory and clinical facts harmonize, science obtains a triumph, and the physician thus enlightened is doubly armed.

* That is, a theory respecting the therapeutic scope of a remedy, derived from its physiological action upon the organism of the lower animals. Thus all scientific experimentation.

Stahl characterized the materia medica of his day as a "stable full of offal." Sydenham complained that "practice was pestered with too many eminent remedies". Bichat declared that we possessed little positive knowledge respecting the action of remedies.

Whilst these observations were, doubtless, true in the days of these eminent men, they are not equally true in our day; for much of the uncertainty of the action of various remedies has disappeared under the enlightening influence of modern advancement in physiological and pathological knowledge, together with therapeutical experimentation under the light thus evolved. Sanctioned physiology and pathology "vain amusements of the mind." But

what, by him, were deemed "rare amusements", have furnished to some extent already, and are more fully destined to furnish the solid and enduring foundation of a system of enlightened therapeutics.

To illustrate the preceding principles, we will employ a few propositions and corollaries; one selected, and the others formulated by the writer.

1. Prop.- "All pathology is but the physiology of organic perturbation" (Hawthorne).

Corollary.- It follows that a system of sound therapeutics must rest upon a full and clear knowledge of physiology and pathology.

2. Prop.- The internal harmony of the organism, when in a pathological

state, is always towards recovery.

Corollary.- Violent interference with pathological conditions which are under the control of the vital forces, is never justifiable.

3. Prop.- Recovery from organic perturbation is always effected by the vital forces, either unaided or aided by proper remedial measures.

Corollary.- Remedies, of themselves, are not curative of disease, but merely auxiliary to the reconperative forces of the organism.

Our first proposition may be proven thus: Physiology, in its totality, is the synonym of aggregate organic function. A pathological state of the organism cannot exist without perturbation of organic

function. Therefore, "all pathology is but the physiology of organic perturbation".

Our second proposition is susceptible of the following proof: If the inherent tendency of the organism, when in a pathological state, is not towards recovery, it must be towards death. It cannot be towards death; for, if so, owing to the complexity of the organic structure, death must result, in all cases, in spite of remediate management; and health could not be maintained under the most favorable circumstances. Therefore, the inherent tendency of the organism, when in a pathological state, is always towards recovery. This second proposition is the only one that seems to be weak. I say seems to be weak;

for it is not weak. An apparent weakness arises when our proposition is confronted with the well-known fact that a pathological state of the organism is often consummated in death; and, for this reason, it may be retorted, "the tendency is often towards death". The person so retorting has either not weighed the language in which our proposition is couched, or else he is deficient in critical acumen. It must be discriminated that the tendency towards death is not organic, but one born of the morbific cause, which tendency is always towards death, as the organic tendency is always towards recovery or normal physiological action. It is the conflict between these two tendencies that the physician

must balance in his mind, in order that he may reinforce the organic tendency, if possible, by reserves in the shape of well-chosen remedies and the application of approved hygienic measures. The truth is that our proposition can not be disproved, unless it can be shown that disease is as much the normal condition of the organism as health.

Our third proposition may be proven thus: If recovery is not effected by the vital forces, it must be, if at all, through the remedies employed. But it is a settled fact that remedies, of themselves, can never restore a diseased organism to health. Therefore, recovery is always effected by the vital forces, either unaided

or else aided by proper remedial measures.

Our corollaries, of course, stand or fall with our propositions.

It has not been my intention to write anything explanatory of the second phase of Therapeutics, namely: "An explanation of the modus operandi of medicines". I cannot, however, pass on to my concluding observations without presenting a few brief remarks upon this second phase of my subject.

Medicines act in three general ways, to wit:- 1. Mechanically; 2. Chemically; 3. Vitally.

The first way may be illustrated by the mechanical anthelmintics, such as dolichos pruriens, and kindred remedies. The second is illustrated

in the action of sulphuric acid, caustic potassa, and kindred agents in the destruction of a tissue by extracting its water and decomposing it; also by the action of alkalies rendering the urine alkaline. Examples of the third are found in alcohol and opium stimulating nervous function or activity; in tobacco and veratrum viride depressing it; in turpentine and kindred remedies exciting the cells of the kidneys and lungs.

The vital action of remedies is, by far, the most controverted, the most frequently demanded, and the least understood. It is in this action of remedies we meet with most disappointment. Often, from our knowledge of the physiological action of a remedy,

we are led to hope for good therapeutical results, only to meet with a sore disappointment through negative results or positive harm. Even remedies whose vital action is seemingly well established by the testimony of clinical experience, and where the indications for their use seem clear and explicit, we fail to get a favorable therapeutic response. Why is this? Either our diagnosis of the character of the pathological state is defective, or constitutional peculiarities of the patient render the remedy inactive or hurtful in that particular case, or else that the remedy is unstable in its therapeutic scope. How much, then, depends upon a correct diagnosis, a clear interpretation of symptoms, and a judicious selection of our remedies!

But all is so dark in therapeutics. Physiology and pathology, as sciences, are, as yet, scarcely free from the trammels of swaddling clothes; and so very much depends upon them in order to give stability, fixedness to the principles of therapeutical science. Light and facts are urgently demanded.

Remedies are said to act directly and indirectly. That is, most remedies have an affinity for certain organs or tissues, and thus spend the force of their action upon such organ or tissue; whilst, owing to the bond of sympathy existing between the various parts of the organism, the entire system feels the effect of the direct action. The effect produced upon the chosen organ or organs by the direct action of the

remedy, is called the "Primary effect". The effect produced upon the system in consequence of the direct action, is called the "Secondary effect". We may give as an example of these two effects of remedies, a diuretic to remove a dropsy. In this case (selecting a remedy whose direct action is on the kidneys) the kidneys are excited, by which action the watery element is extracted in excess from the blood. This diuresis is the primary effect. The blood, in consequence of having parted with an undue proportion of its watery element, and the resultant increase of its density, is forced to take up the effusion in the cellular tissue, and the dropsy is removed. This absorption and removal of the dropsy is the secondary effect.

The secondary effect is quite frequently called for. However, as before stated, I have not proposed to enter into an extended discussion of "the action of medicines"; so these few remarks must suffice on that phase of my subject.—

Concluding Observations.

Since we have very few specifics in our store-house of therapeutic agents, we are forced, in most cases, either to reject drugs entirely, and depend upon nature and hygiene; or we must employ the dangerous "tentative" practice; or else the safer "expectant" line of treatment,— that is, wait and endeavor to control the symptoms as they arise. Of course we always try to remove the cause of the disease; but the cause is frequently unknown.

The removal of the cause is often the cure. It is always so, unless the vital force of the organ or organs affected has been so much lowered that there cannot be proper reaction.

The expectant method of treating disease is the most difficult of all methods to practice. In this method there must be no violent interference unless the character of the symptoms demand it. It is not simply trusting to nature and hygiene; it is that, and more. It is a careful watching of the pathological workings of the organism, anticipating dangerous complications, and supporting the waning life-force of the organ or organs suffering. To do all this without producing harm to the patient by over

medication, requires the highest skill, the most consummate ability to interpret symptoms aright, and a delicate discrimination in the selection of remedial agents. The skill demanded is so high that few physicians pursue a true expectant course. They either institute a blind active interference, or else they leave all to nature and hygiene.

Finally, since "all pathology is but the physiology of organic perversion"; and since the inherent tendency of the organism, when in a pathological condition, is always towards recovery; and since remedies, of themselves, are not curative of disease,— why should we not trust to nature alone, under good hygiene, to work out a restoration to health? He has a school of prac-

titioners who virtually do this; who, by attenuating their remedies until the most delicate chemical test can scarcely (if at all) discover them, are thus forced to rely upon nature and hygiene for curative results. I refer to our "homeopathic" brethren. They claim to be more successful with their infinitesimals, than we are with our more extensive quantitative use of remedial agents. Their claim, if true, establishes one of two things:- Either that nature, under good hygiene, will effect more cures, than when active medication is employed; or else, that active medication is often misdirected, and thus more readily aids the materies morbi than it does the vital forces in the curative effort. My own judgment is that

medicines, or drugs, are dangerous agents in unskillful hands; and, in such hands, often work harm where good is intended. What we need, then, is a clear comprehension of the therapy of our remedies, and skillful hands to employ them. No physician can be considered skillful in the treatment of disease, unless he has acquired, by his own experience or from that of others, a comprehensive knowledge of the curative range and incompatibilities of the remedies he employs. And, since a diagnosis of the character of the disease to be treated, depends (either with or aside from his own clinical experience) upon his physiological and pathological knowledge,— he cannot, a priori, be claimed to prove so skill in the remedial man-

agement of diseased conditions of the physical organism, unless he be well versed in those two branches. Our answer, then, to the question propounded at the head of this paragraph, is, that medicines should always be employed whenever they will aid in the restorative process. Though the vital forces may, of themselves, under good hygiene, in a vast majority of cases, overcome disease; yet it may be at such a fearful sacrifice of the vital energy, that a foundation may be laid for the easy developement of those diseases which depend upon lowered vitality to favor their initiation. Besides, there are diseased conditions in which the materies morbi is present in such strong force, that the vital

forces are completely overpowered. In such cases remedial aid is urgently demanded to prevent, if possible, a fatal issue.

Therefore, hear the conclusion of the whole matter:- A judicious application of medicines, or drugs, to diseased conditions of the organism, as aids to the vital forces in throwing off the materies morbi, and effecting a restoration to health, is, in all cases, eminently wise and highly conservative of the Vital Economy.

Louis H. Mitch.

I

my Section

A Thesis

on

The Salivary Secretion

by

H. R. Carter M.D.

1879

Thesis
On
The Kind
Of
Walter B. Dock.
Harrisburg W. Va.

Feb 5th 1879

Sai Blood.

[illegible]

[illegible]

[illegible] the following ingredients

for the generation of the [illegible]

of the [illegible]. [illegible] the [illegible]

river of life [illegible]

[illegible] life [illegible] existence.

When we examine the body

we find six [illegible] two kinds

of blood veins and arte-

rial. The arterial [illegible]

color of bright [illegible]

[illegible] proceeds [illegible]

a clear [illegible]. The [illegible]

is received by the auricles

except in the [illegible]

[illegible] the [illegible]

[illegible] is that the [illegible]

body. But the venous blood is not always of the dark purple hue, and in the cutaneous it sometimes takes on a scarlet tinge, this is due to the activity of an organ and the amount of blood supplied to it for a longer time. The blood of the salivary glands partaking of the appearance of arterial blood, and of the venous membrane in the stomach [illegible]

II. [illegible]

[illegible]

[illegible]

the ingredients with organic
acid is [illegible] a
compound [illegible]
of [illegible]. In the [illegible]
find two kinds of [illegible]
the red and white. The red
blood disks and number the
white in the [illegible]
3rd, [illegible] to be [illegible]
[illegible] red [illegible]
a great [illegible]
and it is through the
red oxygen is carried to the
[illegible]
outline and there [illegible]

[illegible]
[illegible]
shape we might term double
[illegible]
[illegible]
water or a pale yellow color
when viewed separately and
when viewed in a mass
they present a deep red
they have [illegible]
[illegible]
middle of the blood current.
The red corpuscles are
[illegible]
floating [illegible]
red cells and a colorless
[illegible] of water. The most
important of the floating
matter is the haemoglobin

[illegible]

[illegible] and the hair are the [illegible] substance in the [illegible] which contains [illegible].

It is these globules [illegible] give to [illegible] the [illegible] red hue of health, [illegible] it is their deficiency [illegible] cause the [illegible] [illegible] great [illegible]. The diameter of the largest red globules is 1/3500 m.m. the smallest 4/1000 m.m.

The red globules are [illegible] from the white, and [illegible] [illegible] to be their place of formation.

The red globules in [illegible]

[illegible]

are many, those of the [illegible]

[illegible]

animal, for in the [illegible]

they are [illegible]

[illegible]

[illegible]

[illegible] globules of the fish

[illegible]

young.

Besides the [illegible] which I have just described the blood contains a certain [illegible] quantity of [illegible]

[illegible]

[illegible]

[illegible]

[illegible] it is said that the [illegible] be a [illegible] and gradually [illegible] by stretching out a [illegible] [illegible] [illegible]

[illegible]

[illegible] the blood, but [illegible] [illegible] [illegible]

Our attention is next [illegible] [illegible] blood [illegible] transparent [illegible] [illegible] tension [illegible] [illegible].

[illegible]

[illegible] and obtain [illegible]
[illegible]
[illegible]
[illegible] the [illegible]
obtained as it exists in the
[illegible] we can obtain
in a coagulated
state [illegible] freshly drawn [illegible]
[illegible]
takes place it is found
the [illegible]
it has entirely [illegible]
of the blood; [illegible]
[illegible]
[illegible]

[illegible] in running water, [illegible]
[illegible] in a semisolid state [illegible]
[illegible] elastic and they seem [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
regular net work, if the fi-
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
coagulated it is drawn
in water and can be
be kneaded down to a small

[illegible]

if it exist there at all
that it is in a quantity so
small we cannot detect it;
veins near the heart, and
[illegible]
[illegible]
[illegible]

when this equilibrium that
[illegible] of heat, [illegible]
[illegible], why it regulates our
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]
[illegible] [illegible]

Yet we come to the autumn
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]

of the body it is found to be
of a semisolid consistency and
[illegible]

exists [illegible] force the [illegible]
of [illegible] A certain
amount of [illegible]
in the [illegible] fluid, [illegible]
exists also [illegible]
[illegible] saponified
except [illegible]
[illegible] fats [illegible]
a while they exist in the
form of [illegible] oil
[illegible]
[illegible] a saponified condition.
[illegible]
the [illegible] [illegible]
[illegible]
[illegible]

[illegible] phosphates, [illegible]
[illegible] of all [illegible]
[illegible] [illegible]
exist in about [illegible]
of all the [illegible]
[illegible] of the [illegible],
property is that of [illegible]
[illegible] [illegible].

The quantity of blood,
the [illegible] is [illegible] of
the weight of the body.

The blood is distributed
to the different parts of the
body in the [illegible]
vessels in the [illegible]
[illegible] in the [illegible] and
liver and in the [illegible]
[illegible] internal organs.

1879

Acute Lobar

A disease that

cough, dyspn

vital depression

quent occurrence a

the terms

a is distinguished,

by the inflammation

to the alveoli

[illegible]

[illegible] lateral [illegible] first affected the

[illegible] disease extending from

[illegible] the exudate being a plastic or [illegible]

[illegible]

[illegible] lateral Pneumonia so called

[illegible] some, the correctness of which

[illegible] denied by others in a disease of

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] reducing

[illegible] [illegible] it

ded with not a

ost every other disea

disease was

Pe

by different a

extinct even time today

s, as will become app

n he comes to

t of making well

[illegible]

[illegible] chemical known [illegible]

[illegible] a of the [illegible]

[illegible] of diagnostic power [illegible]

[illegible]

[illegible] we are told greatly contributes

the [illegible]

[illegible]

[illegible] Stoll and others but

[illegible]

[illegible] Plenetz

[illegible]

[illegible] recorded

y English w

Germans were slow to accept the

t since their adoption they h

— The

Krupp's Prem

Chemales

the

nbrace

the Middle & Southern states

All authors seen

[illegible] disease th[illegible]

[illegible] I think may be doubt[illegible]

[illegible]ed under the same type [illegible]

[illegible]

[illegible]

[illegible]ually than the white [illegible]

[illegible]

[illegible]

[illegible] more subject to the disease than [illegible]

[illegible] are but the [illegible]

[illegible]

[illegible]

[illegible]t the immorality from [illegible]

[illegible] rural district

authors, although Flor

year of year; two thirds of a

occur in winter & spri

each in pairs

ore-frequent

ature.

occurs at all period

authentic

led to conclude

[illegible] be settled by facts

Does it ever occur

By many it is supposed

[illegible] much we know that it

[illegible] to a much greater extent

[illegible]

A specific influence can hardly be

[illegible] in some so called epidemics

[illegible] suppose that contagion

[illegible] at the same time

[illegible] patient [illegible]

Feb. 1.

any affection of

very many other diseases the

other pulmonary diseases

fevers cardiac and renal

logical & anatomical characters

before stated the disease consists

flammation

[illegible] the [illegible] of the
[illegible] ~~are~~ we may better affirm
[illegible]

because during the [illegible]
intermediate terminal bronchi differs from
[illegible] of the larger [illegible]
contain many follicles and in place
squamous epithelium. It is
[illegible] the blood comes in such close
[illegible] with the atmosphere and
[illegible] acute inflammation of this part
[illegible] we are considering
[illegible]

[illegible]
[illegible]
[illegible]

[illegible]

[illegible]

[illegible] large

[illegible] the first stage the walls are dis-
tended with blood the lung is very
[illegible]
color contains little air
[illegible]

[illegible]

the stage varies from a few hours
to three days

[illegible]

the effusion and coagulation of
fibrinous exudate from the blood.

[illegible]

[illegible]

color and not so [illegible]

passes into the alveoli being pressed

increased two pounds.

The coagulated product consists of

les, oil globules and epithelial

solution does not take place in

patient survives the most analogous

follows.

this stage the red color and

appearance of the

lung is less fine.

[illegible]

[illegible] appearance

[illegible] elastic or

[illegible]

[illegible] will take place or the

[illegible] yellow Hepatization or [illegible]

[illegible]

[illegible] or appearance and forms [illegible]

[illegible] lent fluid when cut across.

[illegible]

[illegible] and by some we are told that

[illegible] or fibrous degeneration [illegible]

[illegible] cur. In most cases the pig[illegible]

[illegible] the affected lobe or lobe

he suffers oftenest. The inferior
one much more frequently the seat
of inflammation, and this is true

the left side.

stages

The disease usually
with a chill, which is below
the starting p

[illegible]

[illegible] night [illegible] at
[illegible] 5 onset, precipitating the
[illegible] a very short space of
[illegible] from a condition of appar-
[illegible]

P[illegible]ich is an early symptom
[illegible] generally afflicted [illegible]
the [illegible]. It varies in degree and
[illegible] with the [illegible] of the
[illegible]. [illegible]
[illegible]

[illegible]. Intense pressure [illegible]
[illegible] pain is increased by the
cough which occurs

stomach

[illegible] gave not [illegible] at [illegible]

[illegible]

[illegible]

at night The heart action

[illegible]

accelerated and offen

times the heart [illegible] often [illegible]

able symptom [illegible]

head, loss of [illegible]

[illegible]

[illegible]

[illegible] money and light [illegible]

in quantity. In most c

[illegible] coolans [illegible]

[illegible] later it assumes the cha

[illegible] so great th

[illegible] it contains a still greater [illegible]

[illegible] This is the so called Prun

[illegible]

[illegible]

[illegible]

[illegible]

which is from 12 to 15

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] gone.

[illegible] intensity and often [illegible]

[illegible] gitation. The pain is not [illegible]

[illegible]

[illegible] still accelerated out of proportion

[illegible]

[illegible]

of the lungs [illegible]

[illegible]

[illegible]

[illegible] is passed recovery

[illegible]

[illegible] be attended [illegible]

[illegible]

[illegible]

[illegible]

If even this is

[illegible] fatal cases, death generally

[illegible]

[illegible] has occurred. Desquamation may

[illegible] place at any time between the 3rd

[illegible] 4th day, but between the 5 and 9th

[illegible] These are the ordinary symptoms

[illegible] often varied or modified by

[illegible]

[illegible]

The duration of the disease varies

by a combination of

physical signs are sufficient,
inferior to this that a diag
could be made if we are called

symptoms on the premises are
cases definite time period i
tion — the sudden rise of the

in will be of help for us in

[illegible]

[illegible] the value of the pa[illegible]

[illegible] peculiar. By the expert[illegible]

[illegible]

[illegible] for the diagnosis of a [illegible]

[illegible] we are in almost every case effect[illegible]

[illegible]ally reinforced by the means for relief

[illegible]

Physical Signs.

[illegible] differ with the various [illegible]

[illegible]ally constant and generally plain

[illegible]

[illegible]ms. In the first stage there [illegible]

[illegible]ght dullness on percussion [illegible]

[illegible] the pelvic cavity [illegible]

[illegible]

[illegible] Respiratory Rale, which

[illegible] that Laennec thought

[illegible]

[illegible] Respiratory Rale [illegible]

[illegible] be present and cured is heard, both

[illegible]

The respiratory rale is fine and dry [illegible]

[illegible] Williams's comparison of it to the [illegible]

[illegible] ced by rubbing the hair between the [illegible]

[illegible] 20 times a [illegible]

[illegible]

[illegible] respiratory rale a deep inspiration [illegible]

[illegible] crackling [illegible]

[illegible] the walls of the vesicles [illegible]

[illegible]

groans or we may not be called

Sec. 81

inflation of the healthy

Palpation. Vocal fremitus is generally

[illegible]

[illegible] are [illegible]

[illegible] of

[illegible] function in the part diseased.

[illegible]

[illegible] of [illegible]

[illegible]

[illegible] are necessary. If the canal

[illegible]

[illegible]

11. 1. [illegible]

[illegible] is Tubular or Branch

[illegible]

[illegible] as characteristic [illegible]

conductor of sounds than

distinct

complete depilation

the crepitant rale will be co-

ned into this stage. In some cases

new exudate, absent after hav-

pleuritic has occurred.

Stage.

resolution

resonance, which is follow[illegible]
[illegible] normal [illegible].
[illegible]
[illegible] place of the Bronchial rale [illegible]
[illegible]
[illegible]
[illegible] more often the cub[illegible]
[illegible] solution does not take place [illegible]

actual rales that is

absent or very

and the seat of dullness

is the position of the

dullness, in S.

and backward. In pleuri-

horizontal when the patient

Vocal fremitus is increased with

pain in

the

[illegible] of [illegible]

case being [illegible]

es, resonance on percussion

) absence of bronchial breathing

[illegible]

being more moist, situated in the

most dependent part and on

[illegible]

[illegible] of some condition necessitating

dorsal decubitus and the dullness

regressive [illegible]

[illegible] Pneumatosis or Pulmonary

[illegible]

[illegible] Pneumonia [illegible] belongs [illegible]

[illegible] lytic [illegible]

[illegible] frequently confined [illegible] upper lobes while as we have [illegible] Pneumonia is mostly seated [illegible] the lower lobes.

Prognosis [illegible]

[illegible]

[illegible] recovery

[illegible]

or [illegible] upon a weak and [illegible] ished patient [illegible]

[illegible] complicated with [illegible] a [illegible]

[illegible]

Vocal [illegible] The [illegible]

subject upon which I shall have [illegible]

[illegible] carefully least to say [illegible]

[illegible]

[illegible]

by experience, and observation of [illegible]

[illegible] trial and 2d From my [illegible]

[illegible]

[illegible] in regard to [illegible]

[illegible] which [illegible]

[illegible]

[illegible]

[illegible]

[illegible] of followers in the humble faith

[illegible]

[illegible]

[illegible]

[illegible] be kept in mind

[illegible]

[illegible]

[illegible]

[illegible]

80) would recover without [illegible]

[illegible] 1st That our [illegible] above

[illegible]

[illegible] vicinous much [illegible]

[illegible] battle field

Could the disease be aborted [illegible]

[illegible] before hepatization [illegible]

[illegible]

[illegible] se in time I would report to the

[illegible]

[illegible] note down the symptoms

[illegible]

the conditions are much the same

[illegible]

that I believe [illegible] a reason

[illegible]

[illegible] I would wish to

[illegible] large [illegible] in [illegible]

[illegible]

[illegible]

[illegible]

[illegible] and leeches I would call to the

[illegible] the [illegible]

[illegible]

[illegible]

[illegible]

[

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] Veratrum Viride and in

[illegible] Sodium Cicuta

[illegible]

[illegible] this indication and will

[illegible] hardly feel justified in

[illegible] "[illegible]"

[illegible]

use it in much larger doses

[illegible]

[illegible]

[illegible]

in most cases [illegible]

the body can [illegible]
in every case, where the
[illegible] nature called for it

[illegible]
[illegible] frequently renewed and with
[illegible] less inconvenience both
[illegible]

[illegible] method of [illegible]
[illegible] direct [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
which it would be justifiable

[illegible]

[illegible]

[illegible]

[illegible] the order you [illegible] the
[illegible] accordi you will [illegible]
[illegible] your experience with the drug
[illegible] ides with my own, you will [illegible]
[illegible] dered its use all together in
[illegible] you have reached my age
[illegible] believe the medicine requires great
care and discrimination in its
use, but this is true of most fel
medies and it has often been
[illegible]
[illegible] Leida is the same here as
[illegible] also [illegible]
[illegible] with the stomach and
[illegible]
[illegible] rarely indic
[illegible]

to obviate the tendency to [illegible]

[illegible] accomplished by [illegible]

[illegible] which [illegible]

[illegible] attention is that of

[illegible]

[illegible]

is spare, and here Opera will

again become useful.

[illegible]

[illegible] tendency to exhaust

[illegible] electricity

[illegible] a fair [illegible]

[illegible] complications, intercurrent [illegible]

[illegible] sequelae will require

the same treatment they call for

when occurring alone, with modifications, to meet the circumstances.

Effect on us — These I have no hesitation in [illegible]

[illegible] a little about. [illegible]

[illegible] that the specialist [illegible]

This mistake has been corrected [illegible]

[illegible]

[illegible] a [illegible] of a [illegible]

[illegible] absent the [illegible]-

[illegible], but as in most cases

[illegible]

[illegible] has failed to do so

[illegible] The chief use of Cathartic

[illegible]

[illegible] warm fomentations over

[illegible]

[illegible]

[illegible]

his own guides, judgment

all things

tics will find their place

in the treatment of most other

depressing

much more might be added

are alike in all their

remember

disease

Thesis

"Putrefactive Germs in Surgery"

Respectfully submitted to the

Faculty of Medicine

of the

University of Maryland

by

Joseph F. Francis

of W. Va Feb. 14th 1894

Putrefactive Germs in Surgery

The medical literature of today presents a strong contrast with that of a half century ago - Theories of the pathology diagnosis and treatment of disease that then seemed to our fathers' eyes all beautiful and plausible, have given way to sounder views established on more scientific grounds and verified by actual clinical experience - There is scarcely a single subject within the entire scope of medicine which has come from beneath the hand of the modern investigator unmodified and unchanged, and with the removal of these errors has medicine been rescued from the charge of empiricism and raised to the rank of a true Science -

Before the bar of recent inquiry the subject of Spontaneous Generation

has in its turn been subjected to the crucial tests of experiment & investigation Although this is the battle ground upon which scientists have waged from the first dawn of scientific culture, it was not until the parasite was shown to be unquestionably involved in the causation of certain forms of disease that the current of medical thought turned in this direction - then it was that the vast practical moment of this subject was realized in its fullest force and then it was that those investigations were undertaken which have proven it to be one of surpassing interest and boundless importance - The medical profession however cannot claim that all the

light recently shed upon this subject originated within the pale of the profession itself; for since its recent renewal by involving the doctrine of Evolution as its logical antecedent it commands the consideration and examination of all thinking men.

The organisms regarding which the idea of spontaneous generation has been ascertained are those whose natural history is wrapped in obscurity & whose minute size defies the reach of the microscope. Here then we have an discussion engaging the master-minds of the age concerning an agent "so low in the scale of being" as Dr. Wm. Baird says "that the mildew which springs up on decaying wood must be considered

high in comparison"- As regards these low forms of life the world is divided and has for a long time been divided into two parties - the one affirming that we have only to submit absolutely dead matter to certain conditions to evolve life from it - the other affirming that in our day life has never been found to arise independently of preexisting life. It is the object of this paper to set forth in a feeble manner the arguments adduced by that party which claims life as a derivative of life, inasfar as they pertain to putrefactive change.

It is a fact of common observation that if solutions of animal or vegetable matter albumenous

character be exposed to the air they will soon swarm with countless millions of microscopic vegetations - These have received the name of Bacteria - For the exercise of their activity special conditions are required as the presence of atmospheric air or of an oxygenized fluid - a certain degree of moisture - a moderately elevated temperature - a given quantity of albuminous matter - The presence of these conditions enables the Bacteria to perform their mission - the removal of all or one of them blasts the vegetable life and organic decay is arrested - The uniform presence of these vegetations in putrefaction & the fact that the conditions of ordinary life are required for the power

to go on are circumstances that point to them as the active agent. This established the question arises as to whence come these vegetations. On the one hand we are told to believe that a reservoir of force more potent than the Sun itself is stored up in that filthy mass of effete albumen that it is capable of originating life. On the laboratory of the other party worked out by rigid inquiry and laborious research we find his answer to the question. He will show us action attended with result in accordance with Physical laws - fixed - unvarying - yet explainable - effect following cause in an uninterrupted rhythm. He will tell us that in the air lurk millions of atom - like particles and that these

are the germs which people the decaying mass with Bacteria. Let us then peer into that air which he grasps with such cool confidence of success & see if we too can find in it an answer of this problem-

"The sun" says Daniel Culverwell, "discovers atoms though they be invisible to candle light and makes them dance naked in his beam!- A single ray of light stealing into a darkened apartment betrays its presence by illuminating the dust floating in the air. The investigator in this field of labor accordingly captures that sun-beam to aid him in his inquiry- If that proves too feeble in the electric light he has an agent which will meet his every requirement-

The air to be examined is received in a large glass bell-jar, after having passed through two bent tubes connected with it, where it is robbed of its carbonic acid - its moisture and various impurities by means of Sulphuric acid and glass placed in the one tube and caustic potash in the other. A ray of sunlight allowed to enter the room discloses its route - as it does when passed through the bell jar - here its track is still illuminated by suspended mechanical matter. It has therefore cleared the amount set for it in the bent tubes. If beyond entering the bent-tubes the current of air is carefully passed over the tip of a spirit-lamp or flame the suspended matter no longer appears nor does of

when previously passed through a platinum tube heated to dull redness. It is therefore combustible, in other words <u>organic</u> matter. Again, let us place the ignited spirit-lamp in a cylindrical beam that betrays its track in any dark apartment. Within and around the flame we see circles of darkness blacker than the blackest smoke that ever issued from the funnel of a steamer. Draw the lamp below the beam and the same gloomy masses whirl upwards. The resemblance to smoke is wonderfully striking, but is it smoke? A red hot poker placed beneath the beam gives rise to the same phenomenon – a large hydrogen flame is next employed and the same dusky shadows shoot upwards.

Smoke is therefore out of the question It is blackness resulting from the absence from the track of the beam of all matter competent to scatter light. When placed below the beam the flame destroyed the floating matter in situ - the air freed from this matter welled upwards into the beam pushed aside the illuminated particles and substituted for their light the darkness due to their own perfect transparency. The beam then passed through our experimental tube filled with motiless air or with Nitrogen Oxygen Hydrogen & Carbonic acid so prepared as to exclude all floating matter means nothing within to scatter light and is not seen; on either side of the experimental tube the thick strewn particles stand out

like a luminous solid under the influence of the illumination - This organic matter is therefore visible. Now let us see if any connection exists between the power of the atmosphere to scatter light and its power to produce life - or in other words whether the visible organic particles existing in it are not putrefactive germs - We think they will be found to go hand in hand -

It has been ascertained that to render air optically pure it is only necessary to imprison it for a certain time in a closed vessel - The light - scattering matter gradually attaches itself to the inner surfaces of the vessel so that a beam of the most concentrated power sent through such air fails to make its track

visible - Advantage is here taken of this fact as being more satisfactory and convenient, in conducting this inquiry - A chamber of suitable size is constructed the sides top and bottom being of wood, A window frame is inserted into each side so as to be face to face - Through the wooden bottom several holes are made into which are fitted air tight as many test tubes to contain the matters to be subjected to experiment. The shank of a pipette passes through a similar opening at the top so adapted as to admit of free lateral motion yet perfectly air-tight Through this pipette at the proper time the test tubes are supplied - Two smaller openings at the top are closed air-tight

with the open ends of two small tubes which connect the inner space with the atmosphere. These are bent many times up and down to increase the surface and thereby augment the resistance to the passage of a current from without inwards and to insure the interception of particles carried by such currents. They provide for the exit of aqueous vapor generated during the boiling of the contents of the bottom test tubes. The boiling is intended to destroy any seeds of putrefaction that may have made their habitat in the experimental matters previous to its introduction into the chamber. It will be observed that at every step special precautions are taken to protect the air within

the chamber from the influence of the atmosphere - The chamber is now closed and a searching glare of electric light shot through it from window to window. Within the area of this light hang clouds of dust as clearly defined as mist on the hill top. We have not attempted to isolate these clouds but so surely as the sun can chase the mist from the mountain side, so surely can we drive out of the chamber every particle of this dust - But it is not our intention to meddle with this dust - we propose to let the air dispose of it as best it may - After three days the searching beam is again invoked. Its track is traced on each side - within the case it is

last - Three days then had sufficed for the air to winnow, so to speak, the floating matter out of itself - this it does by depositing it on the walls which had been previously varnished with glycerine for this purpose - The test tubes are now filled through the pipette and the organic matter so introduced is exposed, after being boiled, to the action of the motheless air We have here then the Oxygen Nitrogen Carbonic acid, ammonia, Aqueous vapor and all the other vapors which mingle more or less with the ordinary atmospheric air, but self-cleansed from suspended mechanical matter. Query. Can air so cleansed produce putrefaction - To this both the animal and vegetable worlds return a decided

negative. Infusions of any animal or vegetable substance when exposed to our ordinary atmosphere are invariably swollen with putrefaction in from two to four days. Placed at the highest mountain top or at the level of the sea the result is invariably the same. In the motless air of our experimental chamber on the other hand the same infusions remain for months without manifesting the least sign of Bacteria or of undergoing the associated phenomenon of putrefaction. The power in the air of developing such life and of scattering light are thus shown to be inseparably connected. After having enjoyed this immunity for months the opening of one window will again

throw the infusions at the mercy of the mote laden air, so that in a few days they will become putrid and rampant with life.

We are as strongly convinced of the existence of these particles in the air as if we could feel them between the fingers or see them with the naked eye. Let us suppose them to augment in size until they come within range of the senses. Let us suppose also that our knowledge of them is as defective as it is now - that we dont know whether they are germs dead dust or mineral matter. Let us provide a flower pot filled with nutritious earth and into this drop the particles. Assuming that in course of time any ivy springs from that

soil and shoots its tendrils about our room – or that a fragrant rose blooms there. Assuming that every repetition of the process yields the same beautiful result what would be our conclusion? Would we regard those lovely flowers as the product of dead dust or mineral matter? Assuredly not. We would believe them to be the offspring of living seeds – we would believe that the particles sown in the flower pot were unquestionably the seeds of the plant flourishing before us. It would be absolutely ridiculous to suppose they had been spontaneously generated. This chain of reasoning is without flaw and it can be applied link by link to the developement

of Bacteria from that floating mass which the electric beam reveals in the air, and in the absence of which putrefaction is unknown.

Surgical science has sought guidance from the Germ theory and upon it is founded the Antiseptic System of Professor Lister of Edinburg. The illustrations of this theory are of much moment and their introduction here is deemed advisable - those at least adduced by Prof Lister. He says " in order to guard against the access of air in the treatment of large chronic abscesses we used to draw off the matter by means of a trocar and cannula. The instrument dipped in oil was thrust into the cavity of the abscess the trocar withdrawn and the pus flowed out

through the canula care being taken to prevent the possibility of regurgitation by gentle pressure over the part. The canula was then drawn out with due precaution against the reflux of air. This method was frequently successful as to its immediate object the patient being relieved from the mass of accumulated fluid and suffering no inconvenience from the operation. But the pus was pretty certain to accumulate in course of time & it became necessary again and again to repeat the process. And unhappily there was no absolute security of immunity from bad consequences. However carefully the procedure was conducted it sometimes happened even though the puncture seemed healing by first intention that feverish symptoms

declared themselves in the course of a day or two and on inspecting the seat of the abscess the skin was perhaps seen to be red implying the presence of some cause of irritation, while a rapid re-accumulation of the fluid was seen to have occurred. Under these circumstances it became necessary to open the abscess by a free incision when a quantity large in proportion to the size of an abscess say a quart of pus escaped fetid from putrefaction. Now how had this change been brought about? Without the germ theory I venture to say that no rational explanation of it can be given It must have been caused by the introduction of something from without. Inflammation of the punctured wound even supposing it to have

curred would not explain the phenomenon. For mere inflammation whether acute or chronic though it occasions the formation of pus does not induce the putrefaction. The pus originally evacuated was perfectly sweet and we know of nothing to account for the alteration in its quality save the introduction of something from without. And what could that something be? The dipping of the instrument in oil and the subsequent precautions prevented the entrance of Oxygen - Or even if you allowed that a few atoms of the gas did enter it would be an extraordinary assumption to make that these could in so short a time effect such changes in so large a mass of albuminous matter. Besides the pyogenic membrane is abundantly

supplied with capillary vessels through which arterial blood rich in oxygen is perpetually flowing; and their can be but little doubt that the pus before it was evacuated at all was liable to any action which the element might be disposed to exert upon it. On this theory then the putrefaction is inexplicable. But if the Germ Theory be admitted the difficulty vanishes at once. The canula and trocar having been lying exposed to the air dust will have been deposited upon them and will be present in the angle between the trocar and the silver tube & in that protected situation will fail to be wiped off when the instrument is thrust through the tissues. Then when the trocar is withdrawn some portion of this dust will naturally remain

upon the margin of the canula which is left projecting into the abscess and nothing is more likely than that some particles may fail to be washed off by the stream of out flowing pus but may be dislodged when the tube is taken out and left behind in the cavity. The Germ Theory tells us that these particles of dust will be pretty sure to contain the germs of putrefactive organisms & if one of such is left in the albuminous liquid it will rapidly develop at the high temperature of the body and account for all the "phenomena"-

Believing then that the atmosphere is the universal medium of contagion Professor Lister was led to elaborate his theory of Antiseptic Surgery - The objects he aims at may be briefly stated

follows 1st To destroy any germs of putrefaction which may have been accidentally implanted in the wound before it is dressed, or to guard against any such implantation, 2 Never to allow the access of air to the wound, except filtered through the antiseptic, 3 To provide for the drainage of decomposable fluids from the wound, without admitting to it the entrance of unfiltered air. The first indication is fulfilled if the wound is not a recent one by sponging it out with a solution of Carbolic acid (which is particularly deadly to the germs) of the strength of about one part of acid to forty or fifty parts of water - or in an operation by showering upon the exposed surfaces and

filling the air with a cloud made by pulverizing this solution in a spray producer. As it is necessary that every tissue laid bare by the knife should be protected from the germs the knives, saws, forceps, needles, & all other instruments used in the operation, as well as the oils and even the hands of the operator & assistants should be freely carbolized, The second indication - the prevention of the access to the wound of unfiltered air - is accomplished by enveloping the exposed part in a medium saturated with carbolic acid & taking care that this medium shall offer a surface sufficient large to prevent the entrance of any air that has not been thoroughly subjected to the

purifying influence of the antiseptic - The wrapping most often made use of is known as antiseptic gauze - a light cloth of open texture impregnated with a mixture of Carbolic acid, resin and paraffin - in which the resin serves as a vehicle for the acid while the paraffin is added to prevent adhesion between different parts of the gauze - Another serviceable mixture for saturating the gauze is the following -

Boiled Linseed Oil	℥iv
Yellow Wax	℥ii
Rosin	℥iv
Spts Terebinthina	℥viii
Calberts Carbol. Ac. No 2	℥ii

Several layers of the gauze thus prepared are wrapped about the wound and then are covered by a light mackintosh

cloth which covers the whole on all sides so as to prevent the discharge from saturating the gauze and thus effecting direct communication with the external air. In order to avoid the iritation which will result from contact of stronger solutions of Carbolic acid with the raw edges of the wound, it is advised to prevent this by covering them with a piece of silk dipped in a weaker solution of the acid. In addition to the defence thus accomplished, the implantation of fresh germs which might by some chance have penetrated through the dressing is also guarded against. When it becomes necessary to change the dressings a wise plan and by far the safest is to surround the whole

with the carbolized spray and to exercise in every regard the precautions adopted in the first instance.

The Third indication - drainage without admittance of unfiltered air is effected by insertion into the wound in the most convenient place of a drainage tube which must not project beyond the dressing further than the dressing otherwise it would convey undiluted atmosphere to the wound.

Whenever these three requirements have been carefully carried out this method of dressing wounds has ~~been~~ been attended with the most satisfactory results. In hospital practice it is especially satisfactory. Listers results in his own hospital experience

as described by himself, have been, that even in the midst of abominations too shocking to be mentioned; and in the neighborhood of wards where death was rampant from pyæmia, erysipelas and hospital gangrene, he was able to keep his patients absolutely free from these terrible scourges.

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